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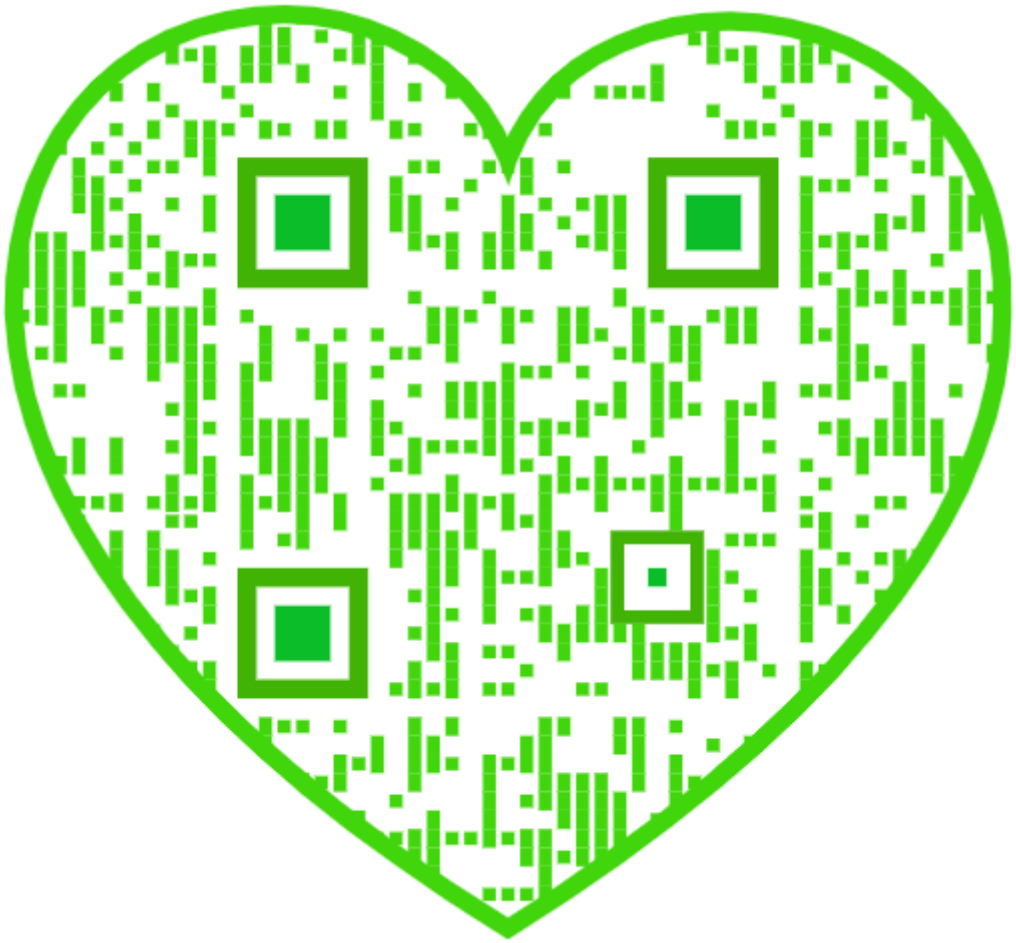
BREWERS' ACCOUNTS.

BY

WM. HARRIS, A.C.A.

SECOND EDITION.



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BREWERS' ACCOUNTS.

BY

WILLIAM HARRIS

Chartered Accountant

(Of the Firm of CRAIG, GARDNER & CO., LONDON, DUBLIN AND BELFAST).

SECOND EDITION.

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PREFACE

In November, 1892, the author delivered to the Manchester Society of Chartered Accountants, the Manchester Chartered Accountants' Students' Society and the Sheffield Chartered Accountants' Students' Society, a Paper on "Brewers' Accounts," which was afterwards enlarged and printed in book form. The copies so printed having become exhausted, the present Edition (which includes considerable additions to the text and to the forms illustrative thereof), has been issued, in the hope that it may prove of some little use to Chartered Accountants and their Assistants, and to Directors of Breweries, Brewers' Clerks and others who may be interested in Brewery Accounts.

W. H.

41, Moorgate Street,

London, E.C., *December*, 1899.

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BREWERS' ACCOUNTS.

INTRODUCTION.

IT has been estimated that the amount of capital invested in breweries and distilleries in the United Kingdom reaches the enormous total of about £200,000,000.

The Annual Parliamentary Return of Brewers' Licenses shows that the number of Brewers for Sale in the United Kingdom has decreased from 26,506 in 1870 to 6,510 in 1898, and this decrease in the number of breweries has gone on concurrently with an increase in the beer consumed from 28,171,661 barrels in 1872 to 35,040,240 barrels in 1898.

The meaning of the figures is evident. The small breweries are either ceasing to exist or are being amalgamated to form large ones, with the consequent demand for improved systems of book-keeping, more accurate cost accounts and statistical records of brewing operations, and more careful and extensive analyses of expenditure.

Another consequence which follows from the application of joint stock principles to breweries is that in most cases the people who own and the people who manage them are different. The preparation of the accounts of a brewery owned, it may be, by a man who commenced life on the lowest rung of the ladder as a cask washer or a drayman, who has worked his way up by successive stages until he has become the proprietor of the concern, and who combines the most intimate practical knowledge of his business with the strongest self-interest in seeing that every economy is observed and that the best possible results are obtained, is in many cases a totally different thing from the audit or investigation of the accounts of a brewery the shares of which may be held by hundreds of people and the working of the concern entrusted to managers supervised by a board of directors.

A good many readers may have a sufficient knowledge of the business to be able to deal intelligently with the accounts of breweries, but there will be others, principally among the younger assistants in accountants' offices, whose knowledge of the working of a brewery will be confined to what they may have gathered from the counting-house books and from a hurried run through the brewery after the work of the audit has been completed. In a well-managed brewery an accountant may do an audit as a matter of pure accountancy with credit to himself and his firm, but if an investigation has to be made into the accounts of a badly managed brewery, or if a set of books has to be drafted for a new concern, then a little knowledge of the business itself and its requirements becomes valuable. It has therefore been thought desirable to preface the subject matter of this book with a short and simple account, in popular language, of the ingredients used in brewing, a rough outline of the process, of the residual products and how they arise, of the Excise regulations which affect common brewers, and the few technical terms which must necessarily be used, so that those not familiar with the trade may more readily understand the accounts with which they have to deal, and be better able to pursue and to ask intelligent questions on matters which may require investigation, but which, from want of a little knowledge of the subject matter, might pass unnoticed.

BREWING MATERIALS—MALT.

The chief ingredient, malt, which may be defined as grain which has been steeped in water, allowed to germinate and then dried, calls first for attention. Nearly all kinds of grain—wheat, oats, rye, maize, beans, &c.—may be, and have been, used to make malt, but barley is *par excellence*, the malting grain. Its chemical constituents, its husk (which is neither too thick nor too thin), the flavour it gives to the beer and its regularity and general adaptability for the making of malt have led to its universal and almost exclusive use. Towards the end of the month of September, and during the months of October and November, the bulk of the purchases

of barley is usually made for the entire season in English country breweries situated in or near to barley growing districts and in nearly all Irish breweries. It is bought in England by measure—quarters, which contain 8 bushels, usually equivalent to two barrels; in Ireland by weight—barrels, weighing 224 lbs. and containing 4 bushels. Great experience and discrimination are required in the purchase of barley, and, indeed, of all brewing materials. The barley should be of good colour (straw), plump in the body, well closed at both ends and with not too thick a skin. A very large proportion of the entire stock of barley required for the whole season or year being usually bought within a period of from twelve to fourteen weeks, the bulk of it requires to be stored. In these circumstances it is usual for the grain to be dried on a kiln, otherwise the moisture it contains might induce heat and germination before the whole of it could be malted, with the probable result that it might become mouldy. If not kiln-dried, it requires, as a rule, to be regularly turned in the store to prevent the evil consequences which would otherwise ensue. Before being malted the barley is sometimes screened in order to separate the small barley from the full-sized grain; otherwise, when being malted, the grain would not germinate *pari passu*. In all but very large breweries the small barley is sold, but in very large concerns the quantity obtained is sufficient to enable a separate malting to be made. Occasionally it is used for horse feeding, but many brewers do not consider it suitable for this purpose.

The first operation in the malting process is that of steeping. A "steep" is a large cistern made of concrete, iron, slate, or other material, and of various sizes, ranging from one capable of holding five quarters to one capable of holding two hundred or more. The barley is covered with water and allowed to soak thoroughly for from fifty to seventy-two hours, the time varying according to whether the barley is light or heavy, and also, perhaps, to a small extent, according to whether the water is hard or soft. Home grown barleys are usually heavier than foreign growths and soft water will permeate the grain more quickly than hard water. When the steeping period has expired the water is run

off and the grain, which by this time has swollen and become very soft, is thrown on the floor of the malthouse. The floor is usually made of concrete, slate or some other substance giving a firm, hard, even surface. The grain at first is "couched" or floored to a depth of one or two feet, and is allowed to lie for about forty hours during which time germination commences. To regulate the germination and to prevent it from proceeding too rapidly the grain is spread out on the floor or thinned a little, at first perhaps to a depth of fifteen inches, gradually decreasing to six or eight inches. The malt at all its stages, is very carefully watched by the maltster, and the grain kept constantly turned. The progress of the germination is indicated by little roots or radicles which sprout out at one end of the grain, whilst, at the same time, the stalk grows (in the case of barley) inside and just under the husk. At the end of from eight to ten days, when this inner growth—called the acrospire—almost reaches to the other end of the grain, or say three-fourths of the length of the barley, the maltster knows that germination has gone far enough. The grain is then taken off the germinating floor and placed on the floor of the kiln under which a steady fire of anthracite or smokeless coal, or coke is burning. The strong heat to which the grain is subjected stops germination and thoroughly clears the grain of all moisture. If required for pale ale, the drying on the kiln is light and the malt, consequently, pale in colour. Porter brewers and distillers require malt which has been dried much more highly, having consequently a browner appearance. When dried sufficiently, which takes from three to four days, the malt is taken off the kiln, the radicles or small roots, called combings, which have grown outside are usually taken from it and the malt is placed in a malt bin. These "radicles" or combings form one of the bye-products. The bin should be so constructed as to keep the grain perfectly dry, and, if possible, air tight. If the bin is not air tight the malt will absorb moisture from the air and become "slack," which will involve the drying of the malt a second time on the kiln at additional labour and expense and, probably, to the prejudice of the flavour of the product. In some cases the combings

are not taken from the malt until it is taken from the malt bin for brewing.

It would be quite outside the scope of these pages to discuss the chemical changes effected in barley by malting. Roughly speaking, a substance called Hordein, a form of starch, which constitutes about 55 per cent. of the substance of barley, is, by the process of malting, transformed into sugar, gum and starch. The physical condition of the grain is also altered, the malt being of a mealy nature and having a sweet taste.

The malting season ranges from about the 1st of October to the 1st of April in the south of England, and to the 1st of May in Scotland, Ireland and the north of England. Cold weather is essential for malting ordinary British and Irish grown grain; light barley and barley grown in hot climates—Turkey, Smyrna, &c.—can be malted earlier and later in the season. It is sometimes very useful and profitable to a Brewer to be able to work his maltings during the summer and early autumn months with foreign grain. In some few cases the maltings are worked all the year round.

Malting and brewing are totally separate operations and are often carried on as distinct businesses. It is not uncommon for maltsters to make malt for brewers and distillers at a fixed charge per quarter, the brewer or distiller buying the barley. Many, if not most, brewers, however, make the whole or a portion of the malt they use and in some cases they make more than is required for their own use, disposing of the surplus to other brewers or distillers. Malt is bought in England by measure, quarters containing eight bushels, each bushel being supposed to contain 42 lbs. In Ireland it is bought by weight, barrels weighing 168 lbs. Within certain limits, weight and quality are antagonistic. Other circumstances being equal, badly or insufficiently malted barley weighs heavier, bulk for bulk, than barley that has been well and sufficiently worked. Therefore the interest of the maltster who sells by weight, and the interest of the brewer who buys his malt to yield produce, are to a certain extent opposed, but the conflict of interests is more theoretical than actual, for maltsters, like

other business men, recognise that their true interest lies in establishing a favourable reputation for their goods.

In recent years, malting on what is known as the pneumatic system has been introduced, but in England at least it has not been extensively adopted. Without the aid of drawings it is rather difficult to clearly explain how a pneumatic malting is worked. In the only pneumatic malting with which the writer is acquainted the ground plan of the house is practically a square, and the room is divided into two rectangles by a large exhaust air chamber running from wall to wall and built from the floor to a height of five or six feet. The malting "floor" instead of being made of concrete or some similar material consists of wire beds (not unlike that of a good many kilns) which are stretched from the walls to the sides of the exhaust air chamber and are fixed about eighteen inches or two feet above the actual level of the ground. The exhaust air chamber has a number of inlets on both of its sides but below the level of the wire bed, and is fitted with a powerful fan. The grain is dropped from the two steeps (which are on an upper floor) to the wire beds in a heap, having a depth of from two to three feet. The result of the operation of the fan is to draw a constant and powerful current of air through the grain under the wire bed and into the exhaust air chamber by means of the inlets mentioned, the exhaust air being discharged outside the building. The air is let into the room through inlets in the shape of open windows fixed some distance up the walls of the house, the air being first cooled by being passed through a bank of coke kept constantly moistened. The suction of air into the malting room is at times so great that it is difficult to open the malt house door. The constant current of air passing through the grain dispenses to a very great extent with the necessity of keeping the grain constantly turned as has to be done under the older method.

The advantages of the pneumatic system over the older and more general method are (1) that the maltings take up not more than one-fourth of the space that would otherwise be required; (2) that they can be worked practically all the

year round, and (3) that the cost of labour is much less; five men for instance can work a pneumatic malting with a steep of 100 quarters; an ordinary malt house of the same capacity would require at least six men. On the other hand malt made under the pneumatic system has not perhaps quite as good an appearance as malt made in the ordinary way, but the mashing results are believed to be quite as good.

SUGAR, SACCHARINE AND OTHER MALT SUBSTITUTES.

Ale brewers and English porter brewers nearly always use in their brewings a proportion of sugar in some form other than that contained in malt. It is the opinion that a certain proportion of these substitutes for, or rather adjuncts to, Malt, such as (*a*) sugar, (*b*) saccharine, (*c*) patent grist, (*d*) raw grain, (*e*) flaked malt, (*f*) syrup, (*g*) glucose, (*h*) rice, improves the body and flavour of the beer. The use of these auxiliaries, however, is on the whole very limited. The "Brewers for Sale," of the United Kingdom, used in the year ended 30th September, 1898, 54,017,362 bushels of malt and 131,162 bushels of unmalted corn, all other substances used being equivalent to only 3,708,346 cwts. Irish porter brewers are especially chary in using anything but malt, and in the case of the brewers of the city of Dublin it may be safely affirmed that absolutely nothing but malt is used.

BLACK MALT.

The dark or brown-black colour given to porter and stout is usually imparted by the mixture of what is variously called patent, roasted, or black malt, the term "patent" being a relic of the time when duty was levied on malt and when a license or "patent" was required to make black malt. Other substances, such as Spanish juice, burnt sugar, &c., are occasionally used. As a rule black malt is bought and not made by the brewer. Some brewers, however, make their own. The process is very simple and is not unlike coffee roasting. A quantity of malt is put in an iron cylindrical vessel which has an axle through it, round which it is made to revolve over a strong fire until the grain is roasted to blackness. The effect of roasting is to destroy almost entirely the utility of the malt

so far as produce is concerned. As a rule inferior malt, or malt made from inferior qualities of barley, is used for roasting.

Caramel (sugar burnt or roasted) is sometimes used in England as a substitute wholly or partly for black malt. Some special preparations of caramel are said to be largely used in English breweries to the practical exclusion of black malt. One reason which induces English brewers to use caramel instead of black malt is that they find it impossible to obtain the same prices for porter grains as they get for ale grains, the former having in many cases to be sold at about one-half of the prices obtained for the latter. Black malt imparts to the grains a flavour which cattle do not like.

HOPS.

Hops are the next ingredient for attention. They are grown chiefly in England, Germany and America. The County of Kent, and especially that part of it round Canterbury and Maidstone known as "East Kent," produces the finest hops in the world. These are followed by the hops of Farnham, Worcester and Sussex. Among continental hops those of Bavaria are considered the best, and among Americans, those grown in California.

The quality of hops is determined usually by (*a*) the colour, which should be a light yellow; (*b*) the fulness of body, which can be seen when a sample is cut out of a bale; (*c*) the quantity of seed they contain; and (*d*) the aroma or flavour, which, by experts, can be judged by taking a few buds in the palm of the hand and rubbing them briskly, which exudes the oil and excites the aroma.

The crop of hops is uncertain, and, as a rule, brewers carry a fair stock from year to year in order to provide against vicissitudes. The new stock is generally mixed in proper proportions with the old, in order to work off both together. Hops lose some of their strength in keeping, and consequently, less new hops, if used solely, are required than old hops. The hops for pale ale are, as might be expected, finer in quality and dearer in price than those generally used for mild ales and for black beers.

HOP SUBSTITUTES.

As already stated the hop crop is uncertain ; so uncertain, indeed, that prices sometimes run up to famine figures. This has led in the past to the use of hop substitutes, but no perfect, or even approximately perfect, substitute for hops has ever been discovered. Such substances as quassia have occasionally, but only very occasionally, been used to impart the peculiar bitter and aromatic flavour of the natural article.

WATER.

Water, the next and by no means the least important ingredient, may be referred to. Generally speaking, pale ales require a hard water, and black beers (porter, stout, &c.), a soft water, such as the water of London, Dublin and the south-east of Ireland generally. The properties possessed by the water of Burton and the Trent Valley generally are pre-eminently the qualities required in water used for the brewing of the finest pale ales. The water used by Guinness, and indeed by all the Dublin stout brewers, is obtained from the same source which feeds the Grand Canal in the County of Kildare, mixed with the Vartry water, which is the common supply of the whole of the City of Dublin. Brewery water is nearly always well filtered. Sometimes, without any known cause, the water suddenly goes wrong and as suddenly goes right again. These occasional troubles happen to most brewers, town and country—perhaps more often to the latter than the former—and while they last they occasion great anxiety and loss. At the end of the year the item "returned beer" is an indication of their effect. For the purposes of brewing pale ale, where the water is soft, it is sometimes sought to be hardened and rendered suitable by the introduction of chemicals, and a porter brewer troubled with hard water may similarly attempt to soften it. It is questionable if these attempts to rectify the water to suit the purpose required are entirely successful. A plentiful supply of naturally suitable water is indispensable to successful brewing. The quality of the water is frequently tested by analysis to detect impurities and to prevent mishaps.

In addition to the water used in the process of brewing, an immense quantity is required for cleansing casks, for refrigerating and for other purposes. Many town brewers get their cooling water from wells and from the rain water which they store. In the country, where the water charges are not so heavy, the whole of the water required is usually drawn from the one source. It is difficult to obtain accurate statistics as to the quantity of water used in breweries, apart from the water consumed in the actual process of brewing. It is probable that in an average sized concern, from 20 to 25 barrels of water are required for cooling, washing, &c., &c., for every barrel of drink turned out; that is to say, a brewery turning out, say, 100,000 barrels of drink in a year, will have a water consumption of about 70,000,000 gallons.

FININGS.

Finings which are used to clarify beer are required more largely for ales than for porter, the former requiring to be bright and clear. They are made of isinglass dissolved in tartaric acid, &c., or hard beer, the solution being added to the casks immediately before they are despatched from the brewery. The expense under this head is not usually a considerable item.

In some localities (in London chiefly) it is the practice to allow customers to "fine" the beer after it has been placed in the cellars; but, if possible, this is a practice which should be avoided, as the temptation to add water when "fining" is very great.

PROCESS OF BREWING.

The foregoing brief account of the principal ingredients used in brewing can only convey a very general but perhaps a sufficiently intelligent idea of them for the present purpose.

A brief outline of the process itself may now be given. About six distinct operations are involved, namely:—

(*a*) The rolling or grinding of the malt into grist.

(*b*) Mashing the grist, that is, mixing it with warm water in order to extract the saccharine.

(*c*) Boiling the worts or raw beer so obtained, during which operation hops are introduced and also sugar or saccharine, if used.

(*d*) Cooling the worts.

(*e*) Fermentation.

(*f*) Cleansing, vatting and racking the beer.

(*a*) The object of grinding or rolling the malt into grist, which is performed by passing it through a pair of rollers, is to coarsely bruise it, so as to enable the warm water more easily and thoroughly to permeate it and extract its sweet or saccharine matter.

(*b*) The grist and very warm water in proper proportions and at a proper temperature are first mixed in a cylindrical vessel, known as the masher, fitted inside with revolving arms which keep the grist and water in constant motion and prevent the former from settling at once to the bottom before the water has extracted all the saccharine matter which it contains. From this vessel the grist and water are conducted to the mash-tun proper, which is usually made of oak staves, iron, or occasionally copper, and is generally, and perhaps preferably, also fitted with revolving arms for the purpose of further mashing, if necessary. The infusion is allowed to remain for a period of, say, two hours by which time the water, which has become worts or raw beer, is very sweet to the taste. After two hours the liquor is drained off by means of taps fixed at the bottom of the tun. This drawing process is facilitated by furnishing the tun with a false bottom perforated with holes or slots, through which the liquor percolates, leaving the grains on the top of the false bottom. At the same time a further charge of hot water is poured on the malt in the tun, at perhaps a slightly higher temperature than the first charge of water, and a third charge of water may even be given. The liquor drawn off is always strong at first, gradually getting weaker, and it is one of the many cares of practical brewers so to regulate their brewing that when the whole of the liquor has been collected it will be of or about a certain strength. If, however, the average strength is higher than

the brewer requires for the particular class of beer he is brewing, the malt in the tun is "sparged," that is, sprinkled with sufficient hot water to bring down the strength of the worts. On the other hand, if when the liquor is collected he finds the strength of the whole too low for his purpose, he has a means of raising the specific gravity by evaporation at the next stage when the liquor is boiled, or a little additional sugar may be added in the copper. At the end of each brewing there is frequently, especially in porter breweries, a certain quantity of worts too weak to go into that brewing. These "return worts," as they are called, are generally kept over for the next brewing, when they are heated and used for mashing the malt. The mashing and sparging processes may last from six to twelve hours but, by the Excise Laws and Regulations, must not exceed twelve hours. The grains, perhaps the most important bye-product in a brewery, are removed from the mash-tun as soon as possible, as decomposition soon sets in; but they may not be removed earlier than one hour after the worts have been all drained off unless the Excise Officer has previously gauged the quantity of grains in the tun.

(*c*) The worts, when drained out of the mash-tun, usually go to a vessel called the underback, and, as quickly as possible, are run from this vessel into the copper or boiler, where the hops and sugar or other saccharine matter are introduced, and the whole boiled for a period which may vary according to the quality of beer brewed from one to three hours. The effect of boiling is two-fold. It coagulates a substance called "mucilage" which is always present in the worts, and which if not eliminated would spoil the beer. It also extracts from the hops, and imparts to the liquor, the flavour and essence of the former. Hops are usually boiled two or three times in porter brewing. In ale brewing they are rarely boiled more than once but sometimes they are used once for pale ale and re-boiled for table beer or other inferior qualities of drink. When the boiling is over the spent hops form a bye-product, but not a very important one.

(*d*) After the worts have been sufficiently boiled they are cooled as quickly as possible. The cooling operation

may be performed by means of cooling rooms where the liquor is run into broad shallow vessels—a fan being kept revolving constantly above it to carry off the hot air—or the cooling may be, and in breweries with modern appliances is, performed by refrigerators. In ale breweries the liquor is first partially cooled in open coolers to allow some of the matter in suspension to settle, and is then put through the refrigerator. Cooling is a process which requires to be conducted rapidly.

(*e*) After leaving the cooler or refrigerator the worts are collected in the fermenting tuns, which are usually very large vessels, the exact description, dimensions and capacity of which are known to the Excise. In these vessels the yeast, in proper proportions, is added to the worts and the fermentation commences. It is at this point, before fermentation, that the quantity and gravity or strength of the liquor are gauged by the Excise Officer. The process of fermentation is well known and may be briefly disposed of. Soon after the introduction of the yeast commotion takes place in the liquor, which commences to bubble and froth and throw off a quantity of gas—carbonic acid. Simply stated, the effect of fermentation is to change a portion of the saccharine in the worts into alcohol; the longer the fermentation is allowed to go on the greater will be the change. If therefore pale ales, which are comparatively highly alcoholic, or ales for export, which require keeping qualities, are being brewed, the fermentation, or attenuation as it is called, would be allowed to proceed much further and longer than would be the case if mild ale or porter for prompt consumption was being brewed. From this it will be inferred that the worts as they leave the mash tun or copper are of much higher gravity and contain more saccharine matter than the ultimate product. Worts for pale and export ales, which were originally of a gravity of 65, might leave the fermenting-tun at a gravity of 16, and worts for Irish single porter would probably come out of the copper at an average gravity of 57 and leave the fermentation-vessel at a gravity of only 14 or 15. During fermentation the worts throw off a quantity of yeast. This rises to the top of the liquor, is constantly skimmed off and removed, and forms a bye-product.

Sometimes it is sold liquid in the same state in which it was removed, when it is known as barm; in other cases, it is pressed and made into solid yeast cakes. the drink pressed out being generally worked up afterwards.

(*f*) The fermentation having proceeded far enough, the liquor is run into a cleansing tun or settling back, although sometimes the cleansing is performed in the fermenting tun. In the cleansing vessel any remains of fermentation are allowed to work off, the remnants of the yeast removed and the beer thoroughly cleansed and cleared. From the cleansing vessel the drink is sent to the tunroom and is either vatted or run into casks, according to the nature or quality of the drink and whether it is for export or immediate consumption.

GENERAL.

As already stated, the foregoing must be regarded as a mere outline of the materials used in, and of the process of, brewing. It would be out of the question in a work of this nature to go into variations of practice. Burton, Dublin, Edinburgh, Yorkshire, and it may be other places, has each its own methods of mashing, sparging, fermenting, cleansing, &c.

It may be mentioned here that it is the size of the mash tun which is usually quoted as an index to the size of the brewery. A " 20-quarter plant " means, generally, a brewing plant, the mash tun of which is capable of mashing 20 quarters of malt at a time, the coppers, cooling vessels, &c., being of a corresponding size. Where, however, as is generally the case in England, a fair proportion of sugar in some form is used, then the mash tun may not correspond in size with the copper, cooling vessels, &c. In ordinary circumstances a brewer can brew five times a week. Each quarter of malt produces, roughly, five barrels of drink. A 20-quarter plant, brewing from malt alone, is therefore capable under normal conditions of brewing say 500 barrels a week; but cases may be met where 800 barrels are turned out by a brewery with a 20-quarter mash tun, the large difference between the out-turn and the mashing capacity being due to the large proportion of sugar used.

EXCISE LAWS—BEER DUTY.

The Excise Laws and Regulations affecting common brewers may be briefly referred to.

Until 1880 the Revenue obtained its quota from brewing by imposing a tax upon malt and sugar—the *materials*; but by the Inland Revenue Act of that year the Malt Tax was repealed and in its place a tax was levied upon beer—the *product*. By Section 11 of that Act a duty of six shillings and threepence was levied in respect of every 36 gallons of worts brewed of the specific gravity of 1,057 degrees, and so on, in proportion for any difference in quantity or strength. Sections 12 and 13 enact that every brewer shall be deemed to have brewed a minimum quantity of 36 gallons of worts at 1,057 for every 84 lbs. of malt or corn and for every 56 lbs. of sugar used. In the matter of Duty therefore, apart from other considerations, it is to the interest of the brewer to have at his command such appliances and skill as, within safe brewing limits, will ensure the extraction of the maximum quantity and strength of worts from the materials used, as, if he fails to get the standard minimum and is charged on the materials, the duty becomes very heavy. The Act, however, provides for cases where, owing to the nature and description of the materials, some deduction should be made from the standard quantity chargeable, and discretion is given to the Commissioners to allow deductions in such cases. In ordinary well managed breweries it is rare to meet cases where the duty has been charged upon the materials. In the case of "Brewers for Sale" (as distinguished from those who brew for private use) the results of the brewings are made up in an aggregate total for each month and treated as the result of one brewing. The duty is payable in one sum, not later than the fifteenth of the succeeding month. To cover accidental loss and waste in the brewing, the Excise allow a deduction of six per cent. to be made from the total quantity of worts. Since its establishment in 1880 the beer duty has been altered twice. In 1880 the burden of duty was increased by reducing the standard gravity from 10·57 to 10·55. This meant an increase in the beer duty of about 3·636 per cent. In 1894 the duty was again increased to 6s. 9d. for every 36 gallons of the

gravity of 10·55. Clause 18 of the Act is very important and is as follows:—

> "When any materials upon which a charge of duty has been made or any worts or beer shall be destroyed by accidental fire or other unavoidable cause, while the same are on the entered premises of a brewer, the Commissioners shall on proof of such loss to their satisfaction remit or pay the duty charged or paid."

On beer, whether in bulk or in bottle, exported to foreign ports as merchandise or shipped for use as ships' stores, a drawback of the duty is by section 36 allowed, computed on the same basis as the duty originally levied, that is to say six shillings and ninepence upon every 36 gallons of the original gravity of 1,055 and so on, in proportion for any difference in quantity or strength.

"SPECIFIC GRAVITY" AND "POUNDS PER BARREL."

When the worts (raw beer) leave the mash-tun they have acquired, as already stated, a sweet taste by the absorption of the saccharine matter in the malt or malt substitute. They are consequently heavier, bulk for bulk, than pure or distilled water, and by "original specific gravity" is meant the relation which the weight of a certain quantity of worts at a temperature of 60 deg. Fahr. bears to the weight of an equal quantity of distilled water also at 60 deg. Fahr., one degree of gravity being, by Section 14 of the Act of 1880, deemed to be equal to one-thousandth part of the gravity of distilled water. If a certain quantity of water were weighed and the weight expressed as 1,000 and if a similar quantity or bulk of the worts used by an English brewer for what he would describe as 21 pound beer, or of the worts used by Guinness or any other Irish brewer for plain porter, were also weighed, the weight would be about 1,058. If a similar quantity of the worts used for double stout were taken the weight would be found to be about 1,073, the worts for double stout being, of course, much stronger than those intended for plain porter. In practice the figure 1,000, which is the basis of the calculations, is usually dropped and the excess only stated, so that the foregoing

gravities would be referred to as 58 and 73 respectively. The gravity so expressed conforms to the standard adopted by the Excise authorities, but is readily convertible into the older standard of "brewers' pounds" referred to below. As already mentioned, fermentation changes the saccharine matter in the worts to alcohol, and consequently the fermenting tuns are dipped and the quantity and gravity declared by the brewer and checked by the Excise Officer within one hour after the worts have been collected in the fermenting vessel. If, however, the worts are not collected before 9 o'clock in the evening the gravity may be declared at any time before 9 o'clock the next morning. Accordingly some brewers make a point of so arranging their brewing operations that the worts are not collected until after 9 o'clock at night with the object of gaining any advantage which the fermentation between the time of collection and 9 o'clock next morning may give them. If the fermentation should have commenced before the worts have been gauged the Excise Officer may take a sample in order to determine the original gravity by distillation.

In England the original gravity or strength of beer is also very commonly expressed as a certain number of "pounds per barrel." By "pounds per barrel" is meant the extra weight in pounds avoirdupois, which 36 Imperial gallons of worts at a temperature of 62 deg. Fahr. have over 36 Imperial gallons of distilled water (which weigh 360 pounds) at the same temperature. One degree of "specific gravity" is one-thousandth part of the weight of water at 60 deg. Fahr., whilst "one pound per barrel" is one three hundred and sixtieth part of the weight of water at 62 deg. Fahr. If, therefore, any slight difference caused by the difference in temperature of the liquor (60 deg. Fahr. in one case and 62 deg. Fahr. in the other) be left out of account, the relation of one degree of gravity say to one pound per barrel is as one thousand to three hundred and sixty—·36, and the relation of one pound per barrel to one degree of gravity is as three hundred and sixty to one thousand—2·7. When a brewer, therefore, speaks of "18 pounds" beer he refers to beer 36 gallons of the worts of which would have weighed 378 pounds avoirdupois, or the worts of which in other words were brewed at ($18 \times 2{\cdot}7$), say 1,050 specific gravity; and if single porter is spoken of as

being usually brewed at 1,058 the same thing could be expressed by describing it as (58 × ·36) say 21 pound beer. The formula, therefore, for converting from one standard to the other is:—

To convert "lbs. per barrel" to specific gravity multiply the former by $2\dot{7}$ or divide by 0·36.

To convert specific gravity to "lbs. per barrel" divide the former by $2\dot{7}$ or multiply by 0·36.

The figure $2\dot{7}$ is a recurring fraction and the absolutely correct formula for converting from "lbs. per barrel" to specific gravity is to multiply the former by 25 and divide the product by 9. To convert specific gravity into lbs. per barrel, proceed *vice versa*.

The Inland Revenue Act, 1880, section 14, enacts that an approved saccharometer and tables shall be used to ascertain the gravity or the quantity of saccharine matter present in the worts. A saccharometer, as its name implies, is an instrument for measuring the quantity of sugar present. The saccharometer prescribed by the authorities for use in breweries is that known as Bates's. It consists of a hollow sphere of brass, below which a weight may be appended and above which a straight stem of brass having a graduated scale rises. If placed in pure water the instrument would sink until the zero mark at or near the top of the brass gauge would be level with the liquid, but if placed in worts, the greater density of the liquid forces the instrument upwards. The stronger the worts the more the rod will be forced out of the liquid, and the gauge on the rod indicates the gravity of the worts which are being tested. Long's saccharometer is most commonly used to indicate "lbs. per barrel."

EXTRACT PER QUARTER.

"Extract per Quarter," a common expression in brewing which will appear from time to time in this book, refers to the saccharine matter extracted from a quarter of malt or its equivalent. The extract per quarter of malt is arrived at by multiplying the number of barrels of drink obtained by the gravity of the worts and dividing by the number of quarters of malt mashed. Thus if a brewer

mashes 100 quarters of malt, producing say 440 barrels of drink of a gravity of 60, the extract would be $440 \times 60 \div 100$ equal to an extract of 264·00. This is taking the imperial barrel of 36 gallons as the standard, which to prevent confusion and erroneous comparisons should always be the basis, although Irish brewers usually work out the extract on the basis of the number of *barrels* of malt used and on the *Irish* measure of 32 gallons to the barrel of drink. In the foregoing example the extract worked out in this way would be $^{495}\frac{\times 60}{200}$, that is, 495 barrels (32 gallons) of drink multiplied by 60, the gravity, divided by 200, the number of barrels of malt—which would result in an extract of 148·5. To convert the extract worked out on Irish barrels to the extract on imperial barrels, deduct one-ninth from the Irish, or *vice versa*, to convert the extract worked out on imperial barrels to the extract on Irish barrels, add one-eighth to the English. In porter brewing, the black malt is usually disregarded when arriving at the extract; as already stated the effect of roasting the malt is to almost, but not quite, destroy the saccharine-giving qualities it originally possessed. In Guinness's it is considered that black malt yields about one-third of the extract given by pale malt; but the general concensus of opinion amongst Irish brewers is that it yields not more than one-fourth. In cases where duty is charged on materials, black malt is taken into account by the Revenue in the same way that pale malt is.

The extract in English breweries is frequently, indeed nearly always, worked out on the standard of "brewers' lbs." To work out the case cited on this basis the specific gravity must first be converted into brewers' lbs. $\frac{60 \times 9}{25} = 21{\cdot}6$ lbs. beer; 440 barrels having been brewed, the extract would be arrived at by multiplying 440 by 21·6 and dividing the product by 100, the number of quarters of malt mashed, which would give 95·04 lbs. extract per quarter (a quantity it may be remarked, which is never, unless in most exceptional circumstances, obtained in actual brewing). The figure of 95·04 multiplied by 25 and the product divided by 9 will bring out the figure 264, the extract already worked out on the other standard.

As already mentioned, in nearly all English breweries, a proportion of sugar or saccharine is used in addition to, and to some extent as a substitute for, malt. The beer brewed is therefore the combined product of malt and saccharine, and the various forms of saccharine have, in the standard laid down by the excise authorities, various equivalents of malt assigned to them according to their qualities. According to the excise standard it is presumed that one 36 gallon barrel of beer of the gravity of 1,055 can be brewed from :—

84 lbs of malt.
56 ,, raw cane sugar.
64 ,, invert or glucose.
68 ,, No. 1 syrup (14 lbs. to gallon).
82 ,, No. 2 syrup (13 lbs. 2 ozs. to gallon).

It being clearly impossible in a brewing where malt and sugar have been used to separately ascertain the exact yield from each, it is usual, in computing the extract in such cases, to deduct from the total extract the extract assumed to have been yielded by the sugar and to consider the balance as the extract derived from the malt. For example—suppose that 50 quarters of malt and 15 cwt. of raw cane sugar were used in the production of 257 barrels of 18·5 lbs. ale, the extract (assuming the excise standard extract from sugar to be adopted) would be arrived at thus :—

257 barrels of 18·5 lbs. ale	=	4,795 lbs.
Deduct—Standard Extract from 15 cwt. raw cane sugar = 30 barrels at 1,055, or 20 lb. beer	=	600 ,,
Extract from 50 quarters malt ...		4,195 ,,
Equal to, per quarter		84 ,,

Summarised, the methods of arriving at the Extract on the different bases may be expressed thus :—

Let a equal number of quarters of malt mashed.
then $2a$,, number of barrels of malt mashed.
b ,, specific gravity of drink.
$\frac{9b}{25}$,, brewers' pounds.

c equal number of imperial barrels of drink.

$c + \frac{1}{8}c$,, number of barrels (32 galls.) of drink.

EXAMPLE.—If 100 quarters of malt produce 440 imperial barrels of drink at a gravity of 60—

(1.) To find the extract per quarter, taking the imperial barrel and the specific gravity as the basis.

(2.) To find the extract per quarter, taking the imperial barrel and the brewers' pounds as the basis, and

(3.) To find the extract per barrel, taking the Irish barrel of 32 gallons and the specific gravity as the basis.

(1.) $$\frac{c \times b}{a} = \frac{440 \times 60}{100} = 264.$$

(2.) $$\frac{c \times \frac{9b}{25}}{a} = \frac{440 \times \frac{9 \times 60}{25}}{100} = \frac{440 \times 21{\cdot}6}{100} = 95{\cdot}04.$$

(3.) $$\frac{(c + \frac{1}{8}c) \times b}{2a} = \frac{495 \times 60}{200} = 148{\cdot}5.$$

The different extracts may be expressed in terms of each other, thus :—

Let the first, which is $264 = a$.

,, second which is $95{\cdot}04 = b$.

,, third which is $148{\cdot}5 = c$.

Then $$a = (b \times 25) \div 9 = \frac{95{\cdot}04 \times 25}{9} = 264.$$

$$= 2c - (\tfrac{1}{9} \text{ of } 2c) = 297 - 33 = 264.$$

$$b = \frac{(a \times 9}{25} = \frac{264 \times 9}{25} = 95{\cdot}04.$$

$$= \frac{(2c - (\frac{1}{9} \text{ of } 2c)}{25} \times 9 = \frac{264 \times 9}{25} = 95{\cdot}04.$$

$$c = \tfrac{1}{2}a + (\tfrac{1}{8} \text{ of } \tfrac{1}{2}a) = 132 + 16{\cdot}5 = 148{\cdot}5.$$

$$= \tfrac{1}{2}\left(\frac{2376}{9}\right) + \tfrac{1}{8} \text{ of } \tfrac{1}{2}\left(\frac{2376}{9}\right) = 148{\cdot}5$$

By means of the above formulæ when the extract per quarter on any one basis is given, the extract on any other basis can be obtained from it. This is frequently useful when the extracts of breweries which calculate on different bases have to be compared. In the appendix will be found a

table giving the equivalents in specific gravity and brewers' pounds.

It may be mentioned here that brewers in working out the results of their brewings do not as a rule strictly follow the standard laid down by the Excise authorities as to the extract assumed to have been yielded by sugar, &c.

As a rule the makers of these substitutes state to their customers what extract will be yielded by their goods, and brewers as a rule adopt this with a slight reduction, and of course their daily results from similar malt, and similar saccharine used in different proportions in different brewings give them a fair index to the real extract derived from each.

"Dry" or "solid" extract, and "extract per cent.," are technical terms used by brewers, but as they are hardly ever met with by accountants and have no bearing upon the accounts, no useful purpose would be served by discussing them here.

CHAPTER I.

Having regard to the class of readers for whose use this book is chiefly intended, it has been thought desirable to give not merely descriptions and explanations of the principal books of account and record required in ordinary breweries, but the actual forms and rulings of the books, and, where thought necessary, specimen entries illustrating their use. These forms, rulings, and specimen entries, are for convenience all collected together in the appendix and with them will also be found a few tables of weights, measures, &c., which may be useful for reference.

EXCISE BREWING BOOK.—**Form 1.**

This is a Government Book furnished by the Excise Authorities to every brewer. It must be kept in some part of the brewing premises freely open at all times for the inspection of the Excise Officers in whose district the brewery is situated. Inside the Excise Book are to be found certain printed directions and information, of which a copy is subjoined :—

BREWERY BOOK I.

Notice of Brewing, &c.

Twenty-four hours at least before mashing the brewer must enter in the proper column of this book the day and hour of commencing to mash malt or corn or dissolve sugar, and the date of making such entry, and also, two hours, at least, before the notice hour for mashing, the quantity of malt, corn, and sugar to be used, and the day and hour when all the worts will be drawn off the grains in the mash-tun.

Removing Grains.

All the grains in the mash-tun must be kept untouched for one hour after the time entered for the worts to be drawn off, unless previously gauged by the officer.

Worts Collected.

The worts of each brewing must be collected in the collecting or fermenting vessel, or vessels, before the expiration of twelve hours after running into such vessel or vessels is commenced, and

within one hour after collection, if the collecting is completed before nine o'clock in the evening, or, if later than that hour, before nine o'clock next morning, the brewer must enter in this book the quantity and also the gravity of the worts before fermentation, the number and name of the vessel and the date of making the entry. The worts must remain in the same vessel undisturbed for twelve hours after being collected, un'ess previously taken account of by the officer.

Mixing Worts.

The mixing of worts, of which no account has been taken, with worts of a preceding brewing is strictly prohibited. Worts collected in a collecting vessel, of which account has been taken and proper entry made by the brewer in this book, may be mixed with the produce of a preceding brewing after the expiration of twenty-four hours from the time of being col'ected, or soon as taken account of by the officer, but, in either case, previous written notice must be given. The notice is to be entered in this book, also the date of making the entry and, immediately after mixing, the quantities and gravities of the worts used.

Untrue Entry.

No untrue entry is to be made nor is *any* entry to be cancelled, obliterated or altered.

The Brewing Book.

Is to be kept on the entered premises, and at all times ready for the officer's inspection.

Two days' Notice, in writing, must be given before altering the shape, position and capacity of any gauged vessel.

DEFINITIONS.

MALT OR CORN.

Forty-two pounds weight of malt or corn is deemed a bushel and the quantity entered should be according to this standard.

SUGAR.

Sugar means any saccharine substance, extract or syrup, and includes any material capable of being used in brewing except malt or corn. 28 lbs. weight of sugar is deemed an equivalent of a bushel of malt.

It will be observed that the column for "Syrup" is sub-divided. Some syrups are of such density that a gallon of them is taken as equivalent to 14 lbs. weight of sugar; others

are more liquid and a gallon of them is taken as equivalent to 13 lbs. 2 oz. only.

This book rarely comes within the scope of the work of an accountant, but in some circumstances it may become necessary to refer to it.

BREWERS' SURVEY BOOK.—**Form 2.**

The Excise Brewing Book above mentioned is common to the brewer and the Excise officials, but the latter also keep themselves, and for their own exclusive purposes, a Brewers' Survey Book. This book embodies all the information contained in the former book and, in addition, private notes of the Excise officials as to the dip of each fermenting vessel, the capacity and condition of the vessels, and other private observations as to the brewing plant and brewing operations.

ABSTRACT BREWING BOOKS.—**Forms 3, 4, 5, and 6.**

A produce or brewing book or books should be, but are not, kept in every brewery. They should contain at least a record under the operative brewer's hand of the materials used and their descriptions (and sometimes the prices) and the quantity and description of beer produced. The totals of the materials used and drink produced, according to these books, are at the end of the year or other financial period worked up in the proper nominal accounts in the ledger. The exact number of the books and their rulings will depend somewhat upon circumstances, chiefly upon the size of the brewery. In one of the largest breweries in the kingdom, for example, three principal books are in use, namely, (1) The Brewing memorandum book, in which the operative brewer records the proportions of the various descriptions of malt used, the temperatures, &c. The information contained in books of this kind is usually regarded as, and it is believed has been legally upheld to be, of the nature of trade secrets, which the operative brewer is not bound to disclose even to his principal. (2) The saccharometer book, which corresponds to the brewing book. This book gives the quantity of materials

used, the drink collected in the fermenting tuns, the extract, &c. (3) The fermentation book, which, in addition to the operative brewer's private notes as to the course of fermentation, &c., shows the quantity of drink started, and the quantity ultimately collected in the settling vat. the difference being the waste. In addition there are quantity accounts, in debit and credit form, between (*a*) the settling back and the storage vats, (*b*) between the storage vats and the racking vats, and (*c*) between the racking vats and the cask store; the waste, or apparent waste, of each operation being separately shown and recorded by the head brewer. In ordinary concerns, however, sub-division is not necessary to the extent required in very large establishments, and the four different forms given in the appendix are designed to meet the requirements of average sized breweries.

Form No. 3 is a copy of the Produce or Brewing book used in a number of important breweries, and in order to render its working perfectly clear, the weights, quantities, &c., of an actual brewing have been filled in. The following short explanations of the meanings of the terms used and the manner in which the calculations are made may be useful:— "Gyle" has frequently, but not invariably the same meaning as brewing; the terms are synonymous where all the worts of a mashing are used to make one particular quality or strength of beer, but very often two different qualities or strengths of beer are made from the worts of a single mashing and in such cases the operation is called a parti-gyle, and each of the two beers would be called a "gyle." "Gravity 17·6 lbs." is the gravity as declared to the Excise. "Started 6 a.m." is the time at which mashing commenced. "Finished 6 p.m." is the time when the gravity was declared to the Excise. "Brls. Brewed, 165" is the ultimate result in barrels of the brewing. "Lab. Extract;" some of the large breweries have laboratories on their premises in which they carry out miniature mashings from various samples of malt in order to ascertain what extract the malt ought to yield; in smaller concerns, if they want information of this kind, the usual practice is to send a small quantity of the malt or malts to a chemist or consulting brewer who carries out the

miniature mashing and declares the result. "Extract per Qr. 87·3" is arrived at as follows: —

Total Extract from 25 Quarters English and Foreign Malt and 20 cwt. Garton Hill	2,904
Deduct for 20 Garton Hill at 36 lbs. per cwt. = ...	720
Extract from Malt	2,184
Equal on 25 Quarters to per Quarter ...	87·3

"Final Gravity 4·9" is the gravity of the last sample taken of the beer about 24 hours before racking. "Racking Gravity 4·6" is the gravity of the beer after it is run down from F.V. to racking tank; fermentation to a slight extent goes on even after the beer has left the racking tank. "F.V. Dip 37·2, 36·2" means the "dip" or measurement of the liquor in the fermenting vessels, and "F.V. Gals. 5,940" is the quantity of drink directly it has been collected in the fermenting vessel and before fermentation begins, the quantity being arrived at by aid of the "dips" or measurements already given. "Cask Gals. 5,796" is the quantity of drink after it has been put in cask, and consequently is the quantity of drink produced after all waste. "Waste 144" is self explanatory, being the difference between 5,796 gallons and 5,940 gallons. "Total Extract 2,904" is arrived at by multiplying the number of barrels brewed, 165, by 17·6, the weight of the beer. A few words of explanation may also be given as to the headings on the right-hand side of the page. "Yeast 320 lbs. ex. 52. Very fair Yeast" means that 320 pounds of yeast were put into the fermenting vessel, that this yeast was taken out of Brewing No. 52 (brewed December 26th in the previous year) and that the yeast turned out very fair. "Forcing Tray" is a method of testing the keeping qualities of beer by sealing a bottle of beer hermetically and allowing it to stand on a tray of hot water kept at a uniform temperature by means of gas heat; but in most breweries the tests are of a simpler character. "Run Down" merely

indicates the time at which the beer is run down from the fermenting vessel to the racking tanks.

The " wages per quarter " 3s. 3d. is the amount estimated to cover labour expenses in the brewery (not including delivery) and 2s. per quarter for sundries is the estimated amount to cover all other expenses. The proceeds of grains, 2s. per quarter, is also an estimate, but all three figures very closely correspond to actual results. It frequently happens that all the grains are not sold on the same day, some being left over until the day following, and mixed with the grains of the subsequent mashing, and therefore the exact proceeds of the grains resulting from particular brewings cannot be filled in.

Form No. 4 is another brewing book in use. All materials used are shown and the cost price extended; the quantity, quality and gravity of the drink collected, the quantity racked, and the sale price are entered. The monthly totals of this book show :—

1. Quantities and cost price of malt, sugar, and hops used
2. The number of barrels brewed.
3. The number of barrels racked; and
4. The selling value of the drink.

Proceeds of grains are added to the selling value of the drink and the duty to the cost of materials, the difference between the totals of the two columns being the gross profit for the month.

Specimen entries are inserted in the ruling given, and it will be observed that a memorandum is made of the difference between the number of barrels brewed and the number of barrels racked. and the percentage of the waste on the total brewings calculated. In this case, the cost of materials and the duty on the one side, and the selling price of the drink and the proceeds of the grains on the other, are only dealt with, the expenses not being taken into account. On the whole, this form is not so good as the one last dealt with.

Form No. 5, or some adaptation of it, is a convenient ruling for breweries only producing two or three classes of drink, which is the rule in Ireland. It shows the materials

used, the worts collected and charged with duty, the specific gravity, the quantity of drink which ultimately results after fermentation and the loss during that operation. The column showing the worts collected, 109, is plain enough; the three columns "worts taken off," "the drink from the barm press," and "the drink to settling back," added together account for 107 barrels, leaving the difference, waste, 2 barrels.

It is the custom in some parts of the United Kingdom, particularly in Ireland, to "prime"—render in condition fit for use—porter with a certain quantity of raw worts, which will explain the column "worts taken off." The liquor from the barm press, where the barm is pressed into yeast, has already been explained. In some breweries the liquor from the barm is not used, as it is considered likely to deteriorate the beer. In some of the London breweries the barm press drink is vatted and sold separately. The illustrative entry given may help to explain the working of the book but the figures must not be taken as indicating an actual brewing operation, though they may nearly approach one. The worts taken off for priming being in some cases of much higher gravity than the average strength of the whole brew, it becomes necessary in such cases to have two gravity columns, one for the worts taken off, the other for the ordinary worts, see Form No. 6 for example, which is another brewing book in a slightly different form. The remarks made on No. 5 apply equally to this form.

In none of the Forms given is any record kept of the "return worts," which, as already explained, consist of the weakest of the worts, and are carried forward and used for mashing the malt of the next brewing. As a rule, the omission makes little or no difference, as the quantities brought forward and carried forward do not, especially in a porter brewery, vary much, unless the malt has been bad and required a great deal of sparging, or there is some other exceptional cause. If, however, monthly working accounts are made up it would be more accurate to include the quantity at the commencement and at the end of the period. In a brewery where pale ales and table beers or other drinks of rather high and rather low

gravities respectively are being brewed, the return worts from the pale ale would probably be used for the light beer, possibly in large quantities, and in such cases the return worts should be taken into account.

BLENDING OR RACKING BOOK.—**Form 7.**

This book shows the blending and racking of the beer cleansed according to the brewing book. Taking the specimen entry given, 100 barrels are "started," to which are added a half-barrel of finings, 8 of raw worts, 3½ of old beer, 5 from the barm press, and 2 barrels of ullage. The total blended is thus 119 barrels, and the beer actually racked is equivalent to 114, a loss of 5 barrels, equal to 4·4 per cent.

The brewing book may be ruled so as to include the particulars shown in the blending book. Separate books are perhaps better, but sometimes there is an objection to setting out too much detail. Intelligent brewers, however, if they keep such books at all, prefer them to be thorough, and to give the essential statistics of the different operations.

STORE BOOK OR VAT HOUSE BOOK.—**Form 8.**

This book shows the deliveries out of the store of each class of drink and size of cask. The stock is also shown on the right hand side of the folio. The deliveries and the stock in hand compared with the quantity racked according to the Blending Book, plus the stock on hand at the commencement of the period, should show the waste from refilled casks, &c.

Sometimes the yard tap beer (*i.e.*, the beer allowed to the employés) is entered separately in this book and a memo of the total abstracted at the end of the year and sent to the counting-house to be passed through the books. It is perhaps more accurate to deal with "Yard Tap" as a customer. all beer being shown as a sale and debited to the account bearing that name and the total debited to Profit and Loss Account at the end of the year. By this means the

stock account is kept correct, the men's beer being included in the deliveries which are balanced daily.

No drink should be delivered out of the store without a proper written order, as subsequently explained when dealing with Order Books, &c. The entire stock should be ascertained monthly and balanced. Stock of racked drink is in many concerns taken daily, and the close check so applied sometimes results in the discovery of errors, such as drink sold and not entered in the Sales Books.

CHAPTER II.

OFFICE ORDER BOOK.—**Form 9.**

This is a copy of a book which is in use and works very well. The book contains all orders received. A page (or more if the extent of the trade requires) is allotted to each day, and as drink may be ordered days and even weeks in advance, there are many pages going on simultaneously. In some country breweries a good many orders are taken by the draymen when delivering drink, and they note them on the backs of the counterfoils of their dray books. The source of the order is always recorded, a column being provided for the purpose. The book is sent each morning to the store and the drink given to the draymen or otherwise despatched. This book and system is usually sufficient for moderately sized concerns whose chief trade is local.

In large concerns where a shipping trade is done, and where orders are booked a long time in advance, the system is naturally more elaborate. An original order book in the form of a diary is kept. Each night the orders to be executed the following morning are entered from this diary into a forwarding book, the form of which is very similar to, if not exactly the same, as the Form No. 9. This book is taken each morning to the Vat House or cellar and the orders noted when executed.

GATE BEER BOOK.

A reliable gate man is essential in all breweries, and, indeed in works of all kinds. His chief duty is to record particulars of all goods which pass in or out of the brewery. He should also keep a record of the times when the drays return and, if there is anything in the circumstances requiring it, report the condition of the drays, horses, men, &c. Deliveries of beer constitute the great majority of transactions passing the gate, and, as a rule, it is desirable to have a separate gate beer book. It is not necessary to give the

ruling of this book. It is exactly the same as the office order book already given. It may be mentioned here that in all books in which sales, deliveries, postings, &c., of drink of various qualities are recorded, the various qualities should be shown in the same order. This may not be invariably observed throughout the forms given, but as they are collected from many breweries the want of uniformity can be understood. If, as sometimes happens, draymen bring back at night undelivered drink, the quantity so brought back is entered at the end of the day's transactions and deducted from the total, so as to show the net deliveries for the day. In some cases it is found almost absolutely necessary for the gate-man to keep a rough gate book and to send in a clear copy to the office each night, when the draymen have returned and drink brought back (if any) has been deducted from the load originally taken out. Rough and fair copy-books are never to be recommended, but in practice they are sometimes found and possibly there may be cases where their use cannot be avoided. Two books are in use for alternate days of the week.

GATE EMPTY-CASK BOOK.

Empty casks coming in are also so numerous that a separate book is usually given to them. The ruling is simple, a column for the name (usually draymen's names or the names of Railway Companies or other carriers) and columns for the sizes and numbers of the casks—puncheons, hogsheads, barrels, half-barrels, and quarters—being all that is necessary.

GATE DAY BOOK.

This book is used to record all goods passing in at or out of the gate other than drink, empties and grains. It is usually a plain book with a marginal column. The following entries may be taken as typical of the contents of the book:—

14th April, 1898.

Delivered 10 lbs. hops to Edward Markham, Southgate, Nottingham.

Received 36 sacks of black malt from Plunkett, Dublin.

Sent 6 cwt. oats to A.B. (the Manager of the Brewery).

Received 50 tons malting coal from Evans & Co., Limited, Swansea.

Received 100 pockets Worcester hops from Webb and Co., Stourbridge.

Delivered 2½ tons combings to P. Lynch & Co.

Received one cask of barm from Watson & Co., Burton-on-Trent.

Received 320 quarters malt from Perry & Sons, Ltd., Rathdowney.

&c., &c.. &c.

This book is taken to the office each morning, and the book-keepers go over it carefully to see that all the transactions recorded are duly passed through the counting-house books. The references to the counting-house entries are inserted in the marginal column. The above book may not contain elaborate ruling or well classified entries, but gatemen are not skilled book-keepers, and in drawing up books for their use, the design should be as simple as possible.

Some breweries find it more convenient to have two books, one for goods inwards and the other for goods outwards.

PASS SYSTEM.

Instead of having a gate beer book many breweries have in use a pass system. For every lot of drink to be sent out, a pass is made out in the forwarding or order office, and is the authority for the vat-house man and the gate-man to permit the drink specified in the pass to leave the brewery. Sometimes the book is called the ticket book. It is printed in counterfoil form and simply bears the date, and the words—

PASS—

.....Hhds.

... .Barrels.

.. .. Half-barrels.

.....Quarter-barrels.

.....Pins.

The quality is stated and the pass initialled by the forwarding-office clerk. When the drayman passes the gate the pass is handed to the gate-man, who checks the load with it, and, finding it correct, puts the pass into a lock-up box, not unlike a small pillar post-box. The box is taken each night or morning to the forwarding-office, is there opened, the passes compared with the counterfoils, and the sales book written up from the forwarding book as already described.

In very large breweries the passes may be printed in inks of different colours to facilitate the forwarding and counting-house work. In many cases this system is used side by side with the ordinary gate books, the latter being used for the town trade, and the pass system for shipping (country and export) trade.

CHAPTER III.

SALES BOOK.

The sales books in all breweries are generally similar in form, though many minor differences in the rulings are met with, which affect or result from the system on which the ledgers are grouped or the cask accounts kept. A variety of forms actually in use are given, each of which may be considered.

Form 10.

In this case there are several sales books, classified according to districts, with ledgers to correspond. Each morning the dray delivery books are taken, and from them the sales books are written up. The columns for date, ledger folio, names and addresses of customers, dray book (number and counterfoil number), draymen's names and casks returned (different sizes) call for no remark. The brewing numbers are painted in white paint on each cask and are entered from the casks into the Delivery Book. For each of the five classes of drink brewed a single column only is allowed. The bulk of the trade in the brewery from which this form is taken is in barrels and half-barrels and the barrel is taken as the unit. Ten barrels are simply written "10"; ten half-barrels, "10/2"; ten quarter casks, "10/4"; hogsheads would be expressed "10 hhds." If two sizes are delivered at the one time, say five hogsheads and six half-barrels, they would be interlined, thus $\frac{5 \text{ hhds.}}{6/2}$. As a matter of form the ruling would be more accurate if the column for each description of drink was subdivided into four or, if butts were dealt in to any extent, five divisions for the sizes of the casks. This would, however, make the book very large, not to say unwieldy. The "Amount" column explains itself. The two other cash columns "Extra" and "Less" serve a very useful purpose, and enable the additions of both drink and money to be proved with-

out checking the additions throughout. For each class of drink the brewery has a standard selling price; in the present example the prices seem to be, for mild ale, 40s. per barrel, for East India Ale, 30s., and for plain porter, 28s., and so on. They always try to obtain their list prices, but do not always succeed. Exceptionally good customers sometimes exact exceptionally favourable terms, and on the other hand a little more than the trade selling price is occasionally obtained, as in the case of private customers. Taking the standard prices as the basis, the "Extra" and "Less" columns serve to record the amounts obtained over the list prices, and the amounts obtained under those prices, respectively. The "Recapitulation" at the foot of the page shows that the amount of the totals in barrels of each class of drink worked out at list prices plus the amount of the "Extra" column minus the amount of the "Less" column, agrees with the total in the amount column. In this Form a single column only is used for "casks returned" and "casks delivered" and as has been remarked, all casks are expressed in barrels. An objection to this system is that although the ledger account may show the casks due in *barrels*, the denominations of the outstanding casks cannot, without trouble, be ascertained. In the brewery from which this form is taken the casks are not numbered.

The totals from three other Sales Books are brought into the book so as to show the aggregate monthly sales.

It has already been stated that the Sales Books are written up from the Dray Delivery Books. Before they are posted the Delivery Books are called over with the Sales Book by two clerks neither of whom has been engaged in the writing up of the Sales Book which is being checked.

Some brewery managers find they obtain more accurate results by writing up the Sales Books from the slips or book sent to the office by the cellarman and checking the entries the following morning with the Draymen's Delivery Books.

The Sales Books having been written up and checked with the Dray Books, the total sales of the day are agreed or reconciled with the total quantity of beer which has passed through the gate according to the Gate Beer Book. If all

deliveries to agencies and stores are passed through the Sales Book at once, as sales, the total of the Gate Beer Book should agree with the total of the Sales Book. In many breweries, however, the agencies and depots are not treated in this way, the sales being only entered in the Brewery Sales Books as and when they are effected at the agencies, as shown by the agency returns transmitted to the brewery weekly or oftener. Where this system is followed, the sales, according to the Sales Books, have, for the purpose of agreeing them with the Gate Books, to be adjusted in respect of drink in stock at the agencies or in transit. A small memorandum book, suitably ruled, may usefully be kept in debit and credit form in these cases, the drink passed out being debited and the totals of the Sales Books, and the stock on hand at the various stores, in transit and in draymen's hands, being credited. The totals, all entries having been correctly made, should agree.

Summarized, the features of the system, of which this form is a part, are as follows:—

(*a*) It contains columns for transactions of all kinds of drink brewed, so that if a customer buys drink of two or more descriptions one entry in the Sales Book suffices;

(*b*) It contains a column for empty casks returned, the Cask Account and the Cash being kept in the Ledger in one account; but it is deficient in so far that it does not show the numbers of the various sizes of casks due by customers;

(*c*) It enables the Ledgers to be separately balanced.

Form 11.

Form 11 is taken from sets of books in use in some large breweries worked on a totally different system. There are separate Sales Book for each description of drink, a plan which, though it may be suitable for a brewery the bulk of whose trade is in two or at most three kinds of drink, would be totally impracticable, or only practicable to a limited extent, in breweries where a great number of different qualities of drink are brewed. The source from which the book is written

up, and the method in which it is called over and checked are similar to those described in the last section. The Customers' Cask Accounts in this case are kept in separate ledgers; consequently no "empties" column is provided. Nor are there columns for "extra" and "less." One of the heads of the counting-house, however, thoroughly familiar with the business of the brewery, goes over each day's sales, and mentally, or on a slip of paper, notes the amounts obtained *over* and *under* the list price. He then makes the summary and calculation of which a specimen is given, the odd 19s. 11d. deducted being the excess of the amounts allowed under the list prices over the amounts obtained over that price.

In saying that there are separate Sales Books for each class of drink, it should be added that there may be three or four in use for each class.

A "Summary of Sales Books" is kept, into which the daily totals (both quantities and amounts) from all the Sales Books are carried, in order to get the monthly total for the nominal ledger. As a rule where the sales are treated in this way, the debtors' ledgers are not separately balanced. It would be much more troublesome to balance them than it is in cases where each ledger has its own Sales Book, but it is not, of course, impossible. It need scarcely be added that the advantage of localising an error within a particular ledger is very important.

Form 12.

The details of the sales are in this case entered on the left hand side of the folio, and on the right hand are analysis columns for the different qualities of drink, both as to quantity (reduced to barrels) and money. If required, an empty casks column may be inserted. In some breweries separate brewing accounts are made up for the different qualities of drink, and where this is the case an analysis of the sales is essential. Unless, therefore, separate Sales Books are kept for the different qualities, some such plan as that provided by this form is necessary.

Form 13.

This book is very similar to Form No. 10, with the addition in this case of columns for "Tied," "Free," and "Private" trade respectively. This form, in addition to enabling each of the ledgers to be balanced separately, shows the amount of sales in each class of trade without separate day books being kept. In other breweries the columns might be named to suit other classes of trade, *e.g.* export, canteen, &c.

Form 14.

This form of book is in use in breweries which do tied, free and private trade, and also sell wines and spirits. In this form the ales, wines, spirits, malt, corn and sugar are all shown in the one day-book, but in many cases it would be advisable to have the sales classified in different day books, the beers being contained in a book similar to Form No. 13, and wines, spirits and sundry goods shown in a separate day book. The extent of sub-division necessary depends upon the size of the brewery and the amount of trade which it does in wines and spirits, &c.

In the brewery in which this form is in use, Draymen's Delivery Books are not used. The order clerk makes up each morning a loading slip for every drayman. This slip shows the name of customer, the goods to be delivered, and the numbers of the casks. When each dray is loaded, it is checked with the slip and the slip taken to the office. The drink is then entered in a book of triplicate forms, giving the name of the customer, particulars of the goods and the amount. At the foot there is a space for a receipt, and the person receiving the goods signs one of these forms which is retained by the drayman. The second form serves the purpose of an invoice and is handed by the drayman to the customer and is retained by the latter. The third counterfoil remains in the book. When the draymen return in the evening they hand in the forms which they have had receipted, and these forms are pasted into the book above the counterfoil retained there, and from these forms the day book is then written up. This system

causes a good deal of labour and on that account is not one to be recommended.

Form 15.

This form shows the number and size of barrels of each class of drink sold but not the money value of each class separately. It also provides columns for bottled beer, stout, malt and sundry sales.

SUNDRY SALES BOOK.—**Form 16.**

This book contains the sales of all residuals. A column is provided for cash sales the total of which can be transferred to the cash book weekly or monthly. Credit sales are entered in another column and analysis columns for the respective residuals complete the book. The book is given as it is in use, but it might be improved by the addition of quantity columns in addition to money columns for "Grains" and "Culms."

MINERAL WATER SALES BOOK.—**Forms 17 and 18.**

Where an extensive trade is done in mineral waters, it may be advisable to have a separate Sales Book, and if, as is sometimes the case, a cash trade is done, it may be advisable to have separate books for credit and cash sales respectively as shewn in Form No. 17. The entire transactions of each day are recorded on a single line. The total of the cash sales from each cart in bottles and cash is entered and the total of the cash for the day extended into the outer column. The entries for a month fill a page and the totals for the month from each cart and the grand total are shown. Form No. 18 is a Mineral Waters Credit Sales Book. A column is provided for the number or name of the carter delivering each lot of goods. The ruling is similar to an ordinary Sales Book and shows quantities as well as amount.

GENERAL.

Occasionally in Ireland cases are met with where casks both of English (36 gallons) and Irish (32 gallons) measure

are in use. This introduces a little complication. The difference is sometimes expressed by writing the English barrel 1/36, the Irish 1/32.

In some breweries which do a country trade small customers pay their accounts when fresh supplies are taken by them. To save labour the Sales Books are ruled in such cases with cash and discount columns, and the same book becomes the medium for posting not only the debits—the drink supplied—but also the credits—the cash received and discount allowed. The total of the cash and discount columns are introduced into the cash book at the end of the week or month.

There may be found in other breweries a class of customers who are not given credit, but are obliged to pay for the drink on delivery, or within a few days afterwards. In many cases the practice prevails of opening accounts for the draymen and charging them with the drink so taken out, crediting the account in one sum with any money the draymen may hand in. This vicious system is frequently the cause of great loss. There should be accounts opened for every customer, however small his trade may be, and such anomalies as draymen's accounts should be discountenanced.

CHAPTER IV.

CASH BOOKS.

The cash book in many breweries is in the simple and common form. On the debit and credit side are columns for discount, cash and bank, all receipts and payments being entered up in the usual way. In other concerns, and especially where the ledgers are separately balanced, the cash transactions are sub-divided and dealt with in separate books.

CASH RECEIPTS BOOK.—**Form 19.**

In this book, all cash received on beer accounts is entered. There are sets of columns for cash and discount respectively, corresponding with the ledgers in use. All cash is acknowledged direct, the draymen's receipts being only regarded as temporary, and columns recording the number of the receipt book, and the folio or leaf used, are provided. If brewers made it a rule to lodge in the bank *all* receipts, and to make all payments by cheque it would be well and would enable the cash book to be more effectively checked and vouched at intervals and at the end of the financial year or half-year by their auditors. In some cases, however, notably in country breweries, this would be impracticable.

PETTY CASH PAYMENTS BOOK.—**Form 20.**

All, or practically, all payments made for purposes, or to persons not requiring personal accounts are entered in this book. Analysis columns are provided to classify the items under their proper heads. Occasionally repayments or refunds have to be made to customers. These also may be passed through this book.

GENERAL CASH BOOK.—**Form 21.**

This book embraces the entire receipts and payments, mostly in a summary form, the details being contained in the various subsidiary cash books. A few illustrative entries

are given, embracing the monthly totals of the minor cash books, all of which are self-explanatory.

All receipts, other than receipts on beer accounts, all payments for hops, barley, coal and other important matters, or payments to persons who have ledger accounts are passed through this book. It will be observed that there is no bank column. In this particular case the proprietors prefer to keep the bank account in the private ledger, but in other cases the bank account is worked by means of columns in the cash book in the usual way.

In many cases, as already mentioned, *one* cash book, drawn up in the common debit and credit form, is made to comprise the details of all receipts and payments.

TRAVELLERS CASH BOOK.—**Form 22.**

A Cash Book in this form should be kept for each traveller and should be written up from his returns. From it the cash received is posted to the various ledger accounts, and the total receipts entered in the General Cash Book weekly or monthly. The totals of the respective ledger columns are posted to the summary accounts of the ledgers. The column showing the traveller's expenses and the amounts handed by him to the cashier or lodged in bank for the credit of the Company obviates the necessity of keeping a ledger account for each traveller and preserves a clear and complete record of his cash intromissions.

TRAVELLERS COLLECTION SHEETS.—**Form 23.**

Form No. 23 is a very simple form of traveller's collection sheet, showing the cash collected under the different classes of trade. The details can either be copied into the cash book, or the cash sheets can be filed and the postings made from them direct to the credit of the customers' accounts, the total only being entered in the Cash Book. The latter plan is frequently adopted and effects an enormous saving in clerical labour.

CHAPTER V.

WAGES BOOK.—**Forms 24 and 25.**

The size of the Brewery is the principal factor determining the form of the Wages Book. In very large concerns, the analysis of the amounts paid is carried out to a degree which would be quite unnecessary in a small or moderately sized concern. The Form submitted will probably be found to answer the requirements of average sized concerns. The classification selected is as follows:—

1. Coopers.
2. Brewery.
3. Tradesmen.
4. Draymen and Stablemen.
5. Malting.
6. Pensioners.

The item No. 2, "Brewery," is frequently sub-divided into, say—

(*a*) Vathouse.
(*b*) Brewhouse.
(*c*) Yard (including cask washers).

The men employed in a brewery are generally on time-work, except coopers, the majority of whom are on piece-work. The brewer as a rule exercises supervision over the Wages Books to see that the time or work is correctly entered and priced. Where the establishment is very large the Time and Wages Books are made up and checked on the system followed in large manufacturing establishments. The coopers' wages perhaps require most care and attention. These men are generally paid by piece work on a regular scale for new work, re-made casks (that is old barrels cut down to halves, etc.) and for repairs. One of the cask office staff usually looks after these wages and prepares the wages-sheets showing the amount payable to each man.

It is a good, perhaps the best, plan to post *all* wages to one account in the nominal ledger showing in inner columns the desired classification.

The item " draymen's allowances " is the amount allowed to draymen who cover country districts necessitating expenses for the draymen themselves and the horses. Usually, there is a fixed scale of allowances.

In breweries where a large number of coopers are employed, it is better to have a separate Coopers' Wages Book. Form 25 is a copy of one in use, which works well.

CHAPTER VI.

BILLS RECEIVABLE BOOK.—**Form 26.**

This book is so drawn as to form the Bills Receivable Ledger Account. The old plan, under which the *total* of the bills was debited to a Ledger Account and the individual items credited as the bills were met or received, which resulted in a balance the composition of which never appeared on the face of the account and could only be got after some trouble, is being discarded and properly so.

BILLS PAYABLE BOOK.

This book should also be in such a form as to constitute the Bills Payable Ledger Account, showing at a glance, at any time, the bills outstanding. The form of the Bills Receivable Book is *mutatis mutandis* followed.

CHAPTER VII.

RETURNED BEER BOOK.—**Forms 27, 28 and 29.**

This book deals with transactions of a troublesome nature, especially if there is a considerable "free" trade. A certain class of customers have a practice of collecting the bottoms of all casks of beer, belonging, it may be, to three or four different brewers, the dregs of glasses, bar-taps and other vessels, and in some cases adding water to the mixture. These the brewer is expected to take back and allow for. Brewers are now, however, getting a little more strict in these matters and not so disposed to submit to the imposition practised upon them in the past. A form of which the following is a copy is in use in many of them :—

Moorfields Brewery,
Leicester.....189 .

Mr.....
.....
.....

Dear Sir,

The.....of drink received from you on the.....is utterly useless to us, having been we assume carelessly gathered. It remains at your disposal or inspection for a week from this date, after which it must go to the sewer, but we can allow nothing for it.

Yours faithfully,
THE MOORFIELDS BREWERY CO., LTD.

A notice such as the above sometimes leads to a reply asking for the cask to be sent back to the customer. It is then passed on to another brewer who may be more complaisant.

Three forms of Returns Book are given, the first two of which are for beers only and the third includes wines, spirits, malt, corn and sugar.

The headings make the forms self explanatory. Between the first two the principal difference is that whereas No. 27

contemplates the amount allowed for returns being credited to the ledger account of the customer, No. 28 provides for the issue of credit notes, which will be paid in cash or received as equivalent to cash at the office of the Company.

The third form is more elaborate, and while providing for the issue of credit notes as in the case of the second form, it provides columns for the analysis of the returns among the different classes of trade.

In some breweries the loose practice obtains of allowing the draymen to dip the returns and to inform the customer of the number of gallons and the amount he will be allowed for it. In well managed concerns this is not permitted. All casks containing returned drink are dipped by the brewer himself or some person appointed to that duty. The contents are then sampled by the brewer or his assistant, and upon his report depends the amount, if any, which will be allowed for the returns. A few typical reports taken from Returned Beer Books are inserted in Form No. 27. In some cases the fault is clearly one for which the customer should not suffer. In others, it would be an inducement to further imposition to allow anything. The brewer having made his report, the quantity of drink to be allowed for is shown in gallons in the proper columns according to the quality of the drink, and the amount calculated. This is posted to the credit of the customer, and the total at the end of each month posted to the debit of returned drink account in the private ledger. This account shows not only the amount but also the quantity (in barrels) allowed. The returns which consist of sound beer are vatted, clarified, and worked up, hence the necessity of showing the *quantity* as well as the amount in the Ledger Account, so that when preparing the brewing account the operative brewer may be debited with the same. As before stated, "Returned Drink" is a matter which requires vigilant attention if the brewer would avoid imposition and loss.

In some cases the Sales Books are provided with a column for "Returned Drink," the total being deducted at the end of the month from the amount of the sales, but it is better to have a separate Returned Beer Book.

CHAPTER VIII.

GRAINS BOOK.—**Form 30.**

The books used in connection with the sale of grains depend upon the manner in which this important bye-product is sold. In many breweries, situated in large towns, contracts are sometimes made with half-a-dozen or more dairymen for the sale to each, in certain proportions, of all grains produced. It may, for instance, be arranged that the grains of each brewing shall be divided into ten lots; that four of the contracting purchasers shall take two lots each, and that two others shall take one lot each. The contracts are usually for a year, the price in the winter (31st October to 1st May) being higher than in the summer, when city dairymen can send their cattle out to grass. Wherever any such system as this is in operation the recording of the grains in the counting-house books, and the check upon the same, are simple and effectual. The brewer sends in a note of the barrels of malt mashed at each brewing, and the grain contractors are charged up accordingly, either weekly or monthly.

Where grains are sold in small lots, and to any one who applies, proper books and an effective check become necessary. The following is a fairly good system, which has been found to work well:—Metal tickets, representing, if square, one barrel; if round, half a barrel; if triangular, a bushel; are used, and are usually in the charge of the brewer or the cashier. A certain quantity of each size is issued to the Grains Clerk. This clerk keeps a cash book somewhat after the Form of No. 30. The tickets issued to him are entered on the debit side of this book and initialled for by him. The various prices, 1s. 6d., 1s., 6d., &c., which head the columns, are the usual prices charged for grains. If the supply is greater than the demand the price is reduced, as the grains must be sold off quickly; if the supply is short, the price is correspondingly raised. The number of tickets issued to the Grains Clerk on any particular day is extended in the column of the price that day. On the other side of the book is entered the cash paid by the Grains Clerk to the cashier, the latter

initialling each amount. At the end of the week or month the book is made up. By adding the columns on the debit side the number of tickets issued at the various prices is shown. From these totals the number of tickets which the Grains Clerk has in hand is deducted, leaving the number of tickets at the various prices, for the proceeds of which he has to account by the cash handed over to the cashier and the cash then in his hands, which is handed over at the balancing time.

Where metal tickets are used it is necessary to have three or four sets made of different metals, say copper, zinc, iron, &c., so that the tickets in use may be changed as the prices are changed, otherwise tickets may be bought when grains are cheap and used when grains are dear. As soon as the tickets are received from the purchaser by the man who issues the grains, he drops them through a slot into a locked box, the key of which is in the possession of the official who issues the tickets to the grains clerk.

The brewer regularly examines the grains book in order to compare and check the grains turned out with the malt mashed. An appreciable amount may be lost or gained every year by a careless or a careful grains man. In some breweries, accordingly, it is the practice to give the grains man a commission based on the grains sold as compared with the malt mashed. In many cases this commission takes the form of a small sum on the quantity of grains turned out over and above the quantity of malt mashed. Thus if 100 quarters were mashed and the grains turned out equivalent to, say, 125 quarters, he might be given a farthing for every four bushels in excess of 100 quarters.

In large breweries the profitable disposal of the grains is a very serious matter. In some cases drying is resorted to, there being a fair trade for dried grains on the Continent. In concerns such as Guinness's the transactions in grains are divided into three or more separate departments such as (*a*) sales to contractors, (*b*) ready money sales and (*c*) dried grains. The books accordingly would require to be more numerous and elaborate than in ordinary cases. As a rule country brewers, for obvious reasons, command better prices for their grains than town brewers.

CHAPTER IX.

CASKS AND COOPERAGE.

The difficulties in keeping a proper record of, and check on, casks and cooperage are very great and give rise to perhaps the most troublesome questions to be met with in brewery books and accounts.

The numbering of casks, which is now pretty general, was not usual until comparatively recent years. It was only in 1871 that Arthur Guinness, Sons & Co. first numbered their casks and at that time the casks of all the Dublin brewers were unbranded.

UNBRANDED CASKS.—**Form 31.**

In cases where the casks are not numbered the cask accounts are, as a mere matter of book-keeping, much simplified and one of two systems is usually followed. Under one, the ordinary sales books and the ledger accounts of the customers are made to record both money and casks. The sales book Form No. 10, and the ledger Form No. 54, or forms to similar effect, may be used in such cases. This plan has the advantage that the balances of casks as well as of money may be extracted at the same time and given in the same balance-book; and the casks owing by a customer are daily brought under the notice of the manager and the counting-house staff. As already mentioned, some of the forms used do not show the respective numbers of each denomination of casks, all casks being expressed in barrels.

In other breweries, where the accounts are very numerous, the cask accounts are kept in separate books. The customers' cask accounts are ruled similarly to the form submitted—No. 31—which is in simple debit and credit form. Debits may be got from the sales book or a casks outwards day book may be kept in which all casks sent out will be entered. The credits may also be obtained from the sales book, or a casks inward book may be kept. The ruling of both casks outwards and

casks inwards will be very simple, columns being provided for date, name and address and a column for each of the different sizes of casks in use.

BRANDED CASKS.

Casks are usually numbered and, rightly or wrongly, most brewers now look upon the numbering of casks and the keeping of proper cask registers as essential, and believe that the additional expense entailed is more than repaid by the more prompt return of empties, by enabling claims against carriers to be more readily made and sustained, and by otherwise reducing losses to a minimum.

With regard to the trade of tied houses, however, and even more so with regard to the trade of managed houses, some safeguards which are essential in free trade may be disregarded.

A word as to the system of numbering may be useful. It is an excellent plan to so number casks that the initial figure of the number at once denotes the size of the cask in question. Thus:—

Hogsheads may commence at and be numbered from 10,000 to 19,999.

Barrels from 20,000 to 29,999.

Half-barrels from 30,000 to 39,999.

Quarters from 40,000 to 49,999.

Pins (if used) from 50,000 to 59,999.

If 10,000 casks of each size are not sufficient for the brewery requirements, six-figured numbers would have to be used—hogsheads, 100,000 to 199,999; barrels, 200,000 to 299,999, &c. The plan of so arranging the numbering that the initial figure indicates the size or class of the article may be usefully applied to many other things as well as casks. Mineral water cases, railway wagons, books in library catalogues, &c., can all be treated in the same way, so that the first figure of the number may be made to indicate the class, size or description. The same principle is sometimes usefully applied in numbering the rooms in a hotel, the rooms on the first floor commencing with 100, those on the second commencing with 200 and so on. This system of numbering is very useful to all the officials and also to guests. In some

of the large London hotels, the numbering of the rooms has become so complicated, owing probably to additions from time to time to the original structure, as to be very confusing. the fourth floor for example having numbers 191 to 256, and 34 to 81, and so on.

Resuming the consideration of the system of recording brewers' casks, the principal books are as follows:—

(*a*) Casks out book (or slips).
(*b*) Customers' cask ledger.
(*c*) Casks in book (or slips).
(*d*) Cask index.

CASKS IN (OR OUT) SLIP (OR BOOK)—**Form 32.**

For the purpose of arranging and working the cask books and registers the trade of a brewer may be, and commonly is, divided into two or more departments, frequently shipping and home. By home trade is meant the casks delivered by the draymen to customers in and about the town where the brewery is situated; shipping comprises casks sent by rail, canal or otherwise.

(*a*)—Home Trade.

A cask clerk attends regularly in the brewery yard, and as the drays are loaded the number of each cask is noted by him in a book, or very often on a slip of paper. The ruling of the book or slip is very simple (Form 32). As a rule, the headings are not printed, the cask clerk being too familiar with the use of the Form to need them, but to be explicit, headings have been inserted defining the use of each column. If slips are used (and they are more convenient than a book) they are filed in order of date for future reference. Sometimes the numbers are copied from the slips into a book, but this causes unnecessary work and it is always better, if possible, to work with or from original documents.

In this department and at this stage, the cask clerk does not as a rule, know, to whom the respective casks will be delivered, and therefore, simply takes the numbers. The slip is then sent to the cask office.

The draymen when delivering the casks record in the counterfoil of the dray book the numbers delivered to each customer. The dray books (when done with in the counting house) are sent to the cask office, and from the dray books the customers to whom the casks have been respectively delivered are ascertained. The "to whom delivered" column in the casks out slip is then filled in and the casks out slip is complete.

(*b*)—Shipping Trade.

The book or slip used to record the numbers of the casks leaving the yard on shipping business is ruled in exactly the same manner as that used for the home trade. The only difference in the two departments is that, in addition to taking the numbers, the cask clerk also takes down the name of the customer or branch, as the primary destination of the drink in the shipping department is always known.

Form 33.

From the "casks out" slip the casks are posted to the debit of the customer's cask account in the cask ledger. There are three columns in each account, for (1) the date when the cask was sent out, (2) the number of the cask and (3) the date when returned. It is, of course, unnecessary to specify the size of the cask; the initial figure of the number indicates that. The columns are so few and narrow that a single page of the ledger usually contains from four to six or more sets of columns, and the columns on each page are also very often divided into eight or ten divisions in the manner shown in the specimen, for convenience of reference. Not more than nine divisions should be made on any one page. By dividing it into ten or more a great deal of work is caused to clerks who, in making folio references, have to write in two figures instead of one. It is not advisable to have too many sets of columns on a page nor should the columns be too long. By means of these accounts, outstanding casks, the dates they were sent out, their sizes, and their numbers may be seen at a glance. The book is constantly examined, and, where necessary, customers are, by a printed

notice, reminded of the casks retained by them beyond the average period, and if this fails, letters are written.

Breweries which have tied houses or houses under management, frequently do not record the numbers of casks sent to them or open cask accounts for them in the cask ledger, although they do so for their trade with let houses and free and private trade. The cellars of such houses are generally filled at stated intervals, and the empty casks removed when the full ones are put in. The risk of delay in returning the casks, or loss of casks is therefore not great, or at least not so great as with free trade.

The "casks in" slip or book is ruled in exactly the same way as the "casks out" slip. The number of every cask returned through the brewery is taken down. Of course the names of the persons who return the casks are not filled in, as frequently—indeed as a rule—they are not known at the time. The station from which the casks have come, or the railway, steamship, or canal company, by which they are delivered into the brewery is, where known, noted by the cask clerk on the slip.

CASK INDEX—**Form 34.**

The casks in slips having been handed into the cask office, it becomes the duty of the clerks in the cask office to at once credit the accounts of the customers by whom the casks have been returned. To enable them to do this a cask index is referred to. This index contains the cask numbers in regular rotation, a number of spaces being left for each cask. When a cask goes out, the date is posted in the first column, and in the second a reference to the customer's cask account. When the cask comes in, possibly without any advice from the sender, the index is referred to, the reference to the customer's account obtained, and the cask written off both in the customer's account and in the index. In some breweries the cask index does not contain the dates when a cask is sent out and when it is returned. Opposite the number of the cask the ledger folio of the customer's account is entered, and when the cask is returned the ledger folio is struck out. This system is said to satisfy all practical

requirements. The illustrative entries in the cask index will indicate that the book is also used to record the date upon which the cask has been repaired, and in some cases, cyphers are used to indicate the class of repair, whether new stave, new head, &c., &c. The working coopers each bear a number. A repair-sheet is kept for each man, and the numbers of the casks given to each of them to repair are noted on this sheet. At the end of the week these sheets (when the wages' clerks have finished with them) are sent to the cask office, and the repairs posted up in the cask index in the manner illustrated. Thus, to follow the specimen entries given, it will be seen that, according to the cask index, the cask numbered 19,994 (which from the initial number is known to be a hogshead) was sent out on the 14th June, 1898. The cask account of the customer to whom it was sent will be found in Cask Ledger T (town), folio 362, division 1 of the page. It was returned on the 15th August, 1898, and went to the cooperage where it was repaired in the week which ended on the 22nd August. The cooper who repaired it was in the brewery known as No. 10. The cask went out again on the 25th August to a customer whose account would be found in the B (Belfast) Ledger, folio 961, division 8.

ANOTHER CASK SYSTEM.—**Forms 35 and 36.**

These Forms illustrate another system of cask registering, which is very common. The cask is posted to the debit of the customer's account (Form 35), at the same time it is entered in the cask register (Form 36) by the figures 1/1, meaning that the cask has been sent to a customer whose cask account will be found on ledger folio 1, division 1. The cask came back on the 31st December and was credited to the customer's account. The entry in the index is cancelled by simply crossing the figures through. This system is in use in a great many breweries but it is not as good as the other just described. The index does not show the number of times, within a given period, which a cask has gone out, nor the date when outstanding casks went out (though this can be got by referring to the customers' accounts), nor is any record made of repairs, or when the cask was broken

down, or when a new cask was branded with the old number, &c., &c. The form of customers' accounts entails the additional trouble of writing in the size of the cask in each case. Of course if the casks were numbered so that the initial number would indicate the size of the cask, this part of the work would be unnecessary.

COOPERAGE INDEX.

In some breweries a separate index is kept to record the repairs to each cask. The book is almost identical in form with the cask index already dealt with. It is a matter of opinion whether it is better to have the repairs indexed separately or indexed in the same book which records the "runs" a cask makes. Perhaps the latter is the more useful plan in the majority of cases. A book to record when each cask was made and when it was condemned is sometimes kept, but all these matters are better recorded in the cask index, although some very experienced brewery managers consider that it is better to have a separate cooperage index. When a cask is broken down the number it bore is usually branded on a new cask. Of course if the cask No. 19,994 in the illustrative entries in Forms 33 and 34 seemed to have been repaired again before it left the brewery or too shortly afterwards, an inquiry would be made as to which was the real "repair." Sometimes casks get burst, or other accidents happen, necessitating the double repair.

Where the casks do not bear branded numbers an effectual check on the cooperage repairs is very difficult. The repairing-shed is sometimes made with a door wide enough to admit a man but too narrow to admit a cask. The repaired casks are all examined on given days and checked before they leave the shed, and a new supply of casks requiring repairs put in. This, however, is not a good check. The great advantage of numbered casks is that it prevents any imposition in this way, because the numbers of the casks identify them and the check on bogus repairs becomes a mere counting-house matter.

CASK DEPRECIATION.

The treatment of the cask account, for the purpose of arriving at the amount to be charged to the trading for depreciation, differs considerably, though the object in all cases is the same—namely, to arrive at a fair charge for the wear, tear, and loss of casks.

(*a*) In some cases the stock of casks in the brewery and in customers' hands (after writing off all that are considered irrecoverable) at the balancing dates is valued at fixed prices, which are usually lower than the actual cost prices. The cask account in such cases would therefore be debited with the value of the casks on hand at the commencement and the cost of the new casks bought or made during the period and credited with the casks paid for and the value at the fixed prices of the stock on hand at the end of the period. The difference would be written off to the profit and loss account.

This method has the advantage of simplicity, but if the fixed prices are much less than the original cost of the casks, the charge from year to year against the profit and loss account may be very erratic. Take the case of a brewery carrying a stock of 20,000 casks, the original cost of which may be taken at £1 and the fair average value at, say, 12s 6d. Two thousand of these casks will, on the average, become useless in each year; the average annual charge to the profit and loss account should be, accordingly, £2,000. But if in any particular year only 500 new casks are bought or made, at an average cost of, say, £1, and 2,000 casks dropped out, the charge in that year to profit and loss will be £1,437 10s. The following year 3,500 casks may be made or bought, and 2,000, as before, dropped out. The charge in that year will be £2,562 10s. Thus—

FIRST YEAR.

Stock	...	...	20,000	at	12/6	...	£12,500	0 0
Bought	...	...	500	,,	20/	...	500	0 0
			20,500				£13,000	0 0

Stock	18,500 at 12/6 ...	£11,562	10 0
Profit and Loss ...	2,000 ...	1,437	10 0
	20,500	£13,000	0 0

SECOND YEAR.

Stock	18,500 at 12/6 ...	£11,562	10 0
Bought	3,500 ,, 20/ ...	3,500	0 0
	22,000	£15,062	10 0
Stock	20,000 at 12/6 ...	£12,500	0 0
Profit and Loss ...	2,000	2,562	10 0
	22,000	£15,062	10 0

Unless, therefore, the stocks are always maintained at the full original cost, which is double or nearly double what they should stand at, and unless the number of casks annually bought or made never varies (and it does vary), this method of dealing with depreciation is not likely to work out satisfactorily.

(*b*) Another method is to write off 10 per cent. from the value at the commencement of each year. This is a better plan, but the stock of casks in the brewery and in the customers' hands should be regularly ascertained, and the value standing at the debit of the account should be tested each year with the stocks in order to detect any undue increase in the value.

(*c*) Another method is to base the depreciation on the principle that every year's trade should bear the cost of a certain number of new casks, computed on the amount of the trade. Thus, if the barrelage of the brewery is, say, 100,000 a year, 1½ per cent.=1,500, is taken as the number of new barrels required to maintain the stock of casks, with the cost of which the trading should be charged. In one year 3,000 new barrels may be made or bought and charged to the cask account; in the next year no new casks may be made. The charge to the profit and loss and the corresponding credit to the cask account in each year would be the same—namely, 1,500 barrels at, say, £1=£1,500. This system is in operation in several breweries, and works well.

It is a useful and convenient plan to have the cask account ruled with inner columns for the different sizes of casks, so as to show the stocks of each size. Adjustments should regularly be made for re-made casks—*i.e.*, barrels cut down to half barrels, half barrels cut down to quarters, &c.

Where drink is exported to places so far distant that the casks cannot be returned, and the price to the customer is consequently fixed to cover the casks, care should be taken to see that the price of the casks and the casks themselves are credited to the cask account, and that the entire amount of the invoice is not taken credit for as an ordinary sale.

The draymen are often allowed, in addition to their regular wages, a small amount for collecting empties, varying perhaps from two shillings per hundred for rounds near the brewery or in large towns, to two pence per cask in country districts or in districts where the collection is more difficult. In these cases a simple cask account for each drayman is necessary.

It is usual and useful to have summary accounts for casks in and out. The principle is similar to that of the "self-balancing" ledger. The stock in the brewery having been ascertained at a given date, the number is debited to the account, new casks and casks returned by customers are also debited, and the casks sent out credited. The balance of this account should correspond with the actual stock in the brewery. The stock should always be counted on the date on which the accounts of the brewery are balanced, but in practice it is or should be, counted monthly or quarterly and any difference should be inquired into.

A similar summary account is kept for casks with customers. The balances of the customers' cask accounts are not taken out frequently, as the work would involve a great deal of time.

When repeated applications fail to bring casks back and sufficient time has elapsed to render it doubtful if they will ever be returned, a list of the same should be made and sent in to the manager, with dates, names of customers, and all particulars. The manager will doubtless send debit notes to the customers in default and endeavour to recover the

amount. When he has done this he will return the sheet with instructions for the cask clerks opposite each cask. The instructions generally are an authority to write off the cask as irrecoverable. Cask clerks should in no case be allowed to write off casks without some such authority.

A suspense or bad debt ledger and index is kept for all casks written off as irrecoverable. Occasionally, like bread cast upon the waters, the casks return after many days.

To keep cask indexes and customers' accounts, in which the numbers of the casks are charged up, involves, as already mentioned, a great amount of clerical work, and in some breweries they only register the numbers and write up the index in respect of casks sent to the country and exported. For the town trade the cask accounts are kept in the ordinary ledgers as illustrated by Form No. 54. There are, consequently, differently ruled Sales Books for the town, country and export trades respectively.

The average number of runs made by casks depends upon the nature of the trade. Other things being equal, porter brewers should get a larger number of runs than ale brewers. Breweries doing a large part of their trade with tied houses, either let or managed, should get more runs out of their casks than breweries doing principally a free trade.

The following are exact statistics from two average sized and fairly typical breweries (each doing about 80,000 barrels a year), showing the number of "runs" per annum obtained by each out of the different sizes of casks, and for the purpose of comparison, the figures of Messrs. Guinness and Co., are also shewn:—

	Hogsheads.	Barrels.	Halves.	Quarters.
No. 1 Brewery ...	9	9	$8\frac{1}{2}$	$4\frac{1}{4}$
No. 2 Brewery ...	8	10	7	$2\frac{1}{2}$
Guinness	9	$13\frac{1}{2}$	$7\frac{3}{4}$	$3\frac{1}{4}$

These averages would not apply to the large Burton and Scotch firms the bulk of whose trade is in Fine Pale Ales and Ales for export. In such cases it would probably be found that the average number of "runs" obtained per cask per annum would be $4\frac{1}{2}$ to perhaps $5\frac{1}{2}$.

GARLAND'S PATENT CASK INDEX.—**Form 37.**

The cask indexes and accounts already dealt with are for use at the brewery itself. Proper indexes and accounts should also be kept at all agencies and depots, and agency books are in some respects more difficult to properly arrange than those of the brewery itself, because casks cannot be sent to any particular agency in any particular order. Cask No. 39,845, for example, may be sent to an agency, and duly returned, and may never go to that particular agency again.

The form of cask register which is perhaps most convenient in such cases is that registered by Mr. J. D. Garland, of Bristol. The index is outwardly in the form of an ordinary vowelled ledger index, except that instead of the right-hand margin of the leaf being lettered from A to Z, it is numbered 1 to 9, and instead of being vowelled each of the nine sections is subdivided into ten divisions, 0 to 9. The book, which has been registered, is published in various sizes, and is in use in many important breweries.

To illustrate the use of the index, assume casks

6,734
67,394
674,950
678
67,981

are included in a consignment sent to a district branch store. The clerk in charge has, in the ordinary course, received his advice note and, after checking it proceeds as follows:—

He turns to section 6, sub-section 7, to get the two initial figures "67." He will then enter the numbers following the two initial numbers. Thus, with cask No. 6,734, he will enter the "34."

He fills in their respective columns:—

(*a*) The date of the stock sheet or invoice recording despatch of full casks to store or agent.
(*b*) The brew number or private mark.
(*c*) The quality.
(*d*) Size of cask.

(*e*) The number of the cask.
(*f*) When the cask is sold, the date of delivery.
(*g*) The name and address of customer and, if necessary, the ledger folio of the customer.
(*h*) The date of the return of the cask to the brewery.

This entry now gives at a glance all information as to this particular cask.

It is desired to know the whereabouts of cask No. 67,394. The entries, as above, are all duly filled up in the index. The ledger reference is, say, 4/191. On turning to this reference it is shown the cask has been collected. Again referring to the index, it is found that there is no date of return to brewery, from which it is obvious that the cask is at the store awaiting return to brewery.

To further exemplify the use of the index, presume the clerk in charge is questioned regarding casks 674,950 and 678. On reference to cask index it is seen that these casks have never been sent out, and the buying agent (or the manager or inspector visiting such store) would be able to trace by the date of the stock sheet or invoice the date when these numbers were despatched to the store, and to demand an explanation as to why they had never been sent out and allowed to become stale stock.

On referring to the index it is seen that cask No. 67,981 has not been sent out and in the folio column instead of a folio are the letters N.S., standing for "Not sold," and the date in the next column shows that for some reason this cask was returned to the brewery full on the date named.

From this register, by taking out particulars of the casks against which no folio is entered in the ledger column and which are consequently unsold, the full details of the stock on hand at any store can be ascertained at any moment without going into the cellars.

These registers can be made up so as to allot the pages to the numbers commencing with such two first figures as may be most generally in use at any particular brewery.

The register adapts itself to the recording of casks from various breweries, as it is only necessary for the initial of the

brewery to be put against the cask number to enable it to be identified; thus, in the private mark column, instead of the brew number, the brewery initial letter can be placed, say "B" for Bass, "G" for Guinness, or "A" for Allsopp and so on.

Editions B and C have been designed to show at a glance without any further reference to ledger, &c., the exact whereabouts of a cask, and in these editions the name and address of the customer is given. In the opinion of the designer of the register, in large branches this is a doubtful advantage—the fact of making the clerk refer to the ledger draws his attention to other outstanding casks the collection of which demands attention.

CHAPTER X.

GUINNESS'S CASK SYSTEM.

Occasional reference has been made to the cask system in use at Messrs. Arthur Guinness, Son & Co.'s, but, perhaps, a few paragraphs specially dealing with their method may be of interest. To deal exhaustively with it and all its details and ramifications would be out of the question in a small work like the present; about 150 clerks (men and boys) are engaged in the cask department of this mammoth concern.

A system framed to cope with business conducted on such a gigantic scale would necessarily be inapplicable in some respects to ordinary-sized breweries, and it may be sufficient therefore to simply glance at its general lines.

Certain broad features are the same in nearly all cask systems, but the numberless small but useful devices and inflections which Guinness's system possesses, and which render it well nigh perfect, are of native origin, and have been devised and by gradations improved, not so much by studying models and precedents as by a succession of able men.

Nearly everything in Guinness's cask department is worked by cyphers or cypher letters. Thus the name of every customer on their books is entered up in a register, and the customer is then given an index number by which, in the cask department, he is thereafter known. The months of the year never appear in the way we should write them. For January the letter A is substituted; for February B, and so on until December, which is denoted by N. Instead of recording in their registers that a cask has had a new stave, a new head, &c., they have shortened labour and simplified their records by a set of alphabetical symbols, thus:—

A may represent a new stave,
B ,, new head,
C ,, enlarging a cask,

and so on. An entry in the cask or cooperage index such as "B —11 - B—10" would mean that on February 11th (1898,

if in black ink, 1899 if in red); the cask opposite which the entry is made had a new head put in by Cooper No. 10.

The chief books or documents in use are:—

1. Cask out slips.
2. Transposition sheets.
3. Cask index.
4. Cask in slips.

The "Cask out slips" are made out in triplicate (by the black leaf method) by the cask clerks who watch the departure of all drink and note the numbers of the casks and the destination of the drink, if known. Two of these slips are practically the same in form as the cask out slip already given, and it is therefore needless to reproduce them. The third copy is in a slightly different form and serves an important purpose, and a specimen is accordingly given. (Form No. 38.)

The second of the three copies made is the advice note sent to the customer.

The first copy goes in the first instance to the index number office, where the customer's index number is written on the slip. It then goes to the transposition room. The number of casks carried by the firm is so large that to commence to write up the cask indexes from each cask out slip would be out of the question. To index twenty casks, all probably odd numbers, might involve a walk of two or three miles to the indexing clerk in going from one room to another to turn up the different indexes for the respective casks. The work of the transposition room is to avoid this. The transposition sheets, of which Form No. 39 is a specimen, are ruled in such a way that (to take the specimen submitted) all casks belonging to series 560,000 to 569,999, which are contained in two indices, are brought together in something like serial order.

The transposition sheets are checked, not only with slip No. 1, from which they are compiled, but with slip No. 3, which forms the customer's cask account. Slips No. 1 are then bound together and kept for future reference. Slip No. 2, as we have already seen, goes to the customer.

The transposition sheets then go to the cask index or cask register office. Form No. 40 is a copy of the index used by the firm and a specimen account. It is somewhat similar to the index already given, but contains some additional columns on the left-hand side.

To follow for a moment the entries given on this form, the page is ruled to take 25 casks, the 25 recorded on the specimen being numbers 501,075 to 501,099, both inclusive. The figures "50" only are printed at the top of the page, the four following figures being added according to requirements. From the initial figure (5) it is known that the casks are kilderkins. No. 501,075 was supplied on the 7th January, 1898, to Mr. James Bailey of Navan.

This gentleman's name is known, or can be ascertained from the customer's index, the number he bears being B102. On 10th February the cask was received back into the brewery. It went out again on the 15th of the same month to another customer, whose index number is F1; was returned on March 4; went out the next day, and did not come back until 12th June.

In the week ended 21st June it was repaired (a new bung stave perhaps, indicated by W. E.) by a cooper known as "R." The left-hand column shows that the cask went into trade (or into use) in November (M), 1892.

The entries relating to cask No. 501,077 are somewhat similar.

The customer B251, to whom it was last supplied, kept it so long that he was charged with its value, the letter "S" notifying this. Some time after being charged to and paid for by the customer, it was returned. The amount charged was refunded to the customer. The cask was then repaired and went out. When it came back it was condemned, having been found to be impregnated with oil and was broken down.

The entries relating to these casks extend over a period of two years, and in the register the entries for the current year would be written in black, for the previous year in red.

Slip No. 3 goes to another room which we may call the archives. In the archives every customer has two pasteboard covers, the size of the slips, bearing his index number, and joined at the top by a canvas strip or hinge. Into these covers the slips No. 3 are placed, the slip being fastened by a little gum at the top, one slip being gummed on top of the other, but so that they may be readily turned over. These covers form the cask accounts of the customers.

The cask in slips follow a very similar course. They go to the transposing room where the transposition sheets are made out with the numbers arranged to facilitate reference to the index. Having been written off in the index, the cask index clerk fills in the index number of the customer, which of course he gets from his Cask Index. The slips then go to the archives, where each customer's cover is got out, and the casks which have come in written off.

It will be seen that the Cask Out slips thus serve the purpose of the customer's Cask Accounts, saving the labour which would be involved in writing up a ledger, and also reducing the risk of error. Guinness's have tried the system of ledger accounts but found it unworkable, except for the accounts of a few private customers. The country stores are worked from and in the brewery, the agents sending up the original Cask Out slips which are put through the ordinary routine.

For cask purposes, the kingdom is divided into several divisions, each division being known by a cypher letter, and the casks sent to, and returned from, each are separately summarized so as to show the outstanding casks in any district.

Each year's casks are also separately balanced, the loss through irrecoverable casks on each year's trading being thus separately shown. To effect this there are always, as already mentioned, inks of two colours in use, black for the current year, red for the year previous.

Statistics to exactly ascertain the average life of casks are frequently compiled. The following is a copy of some of

the results which, being taken at different periods over a large number of casks in each case, may be regarded as reliable :—

	Years.
1.	10·18
2.	10·28
3.	10·14
4.	10·02
5.	10·29
6.	11·00
7.	10·23
Total	72·14
Average	10·31

The frequency with which a cask goes out does not seem to affect its life. The experience of Messrs. Guinness, taken over a series of years, and on lots so large that the average may be relied upon is, accordingly, that the average life of a cask is 10.31 years.

The cooperage is indexed in a separate book; and they have a very good system of check in regard to the breaking down of condemned casks.

The "runs" they obtain out of each cask, are shown by the following figures, for three years :—

				Total.	Average for the 3 years.
Hogsheads ...	8·7	8·8	8·8	26·3	8·8
Barrels	13·3	12·7	14·1	40·1	13·4
Half Barrels ...	7·6	7·8	7·6	23·0	7·7
Quarters... ...	3·3	3·1	3·26	9·66	3·22

Butts, which are a special trade, go out eight times a year.

All round, the casks go out nearly nine times in the year. This is not taking an average of averages, but taking the total output divided by the total cask stock.

As already stated the losses on casks are separately ascertained for each year. The extent of Guinness's losses in this way—that is, for casks neither recovered nor paid for—is astonishingly small and is the most effective testimony to the excellence of their cask arrangements. It averages about £50 per annnm, and in some years has been under £20.

As nearly as possible, one-half of their casks are repaired each year—that is every cask in the place, on the average, goes into the cooperage once every two years. The average cost per cask repaired for wages alone is about 11·66d. The average yearly cost of repairs on the entire stock is about 5·74d. per cask.

The views of certain brewers have been given as to whether the advantages of numbering the casks and keeping numerical registers and cooperage indexes are equal to the cost they involve. Guinness's cask department costs a very large sum, but by that expenditure they save:—

(*a*) An immense sum every year by being able to work their trade on a much smaller stock of casks than formerly, as casks are got in much more quickly than they could be if the numbers were not known. The interest upon the additional sum which would be required, and the sinking fund which it would involve (for it would have to be extinguished in ten years) would be far in excess of the entire cost of the department.

(*b*) About 50 per cent. in the cooperage repairs. These figures and percentages may seem incredible, but they are accurate.

(*c*) Many other advantages, such as being better able to sustain claims against railway and other carrying companies for lost casks.

CHAPTER XI.

REGISTER OF JARS, BOTTLES, &c.—**Form 41.**

If a free trade is done, the invoice price will probably include the jar or bottles, and credit will be given if they are returned, but in sending wines and spirits to managed houses it is important to watch that all jars and bottles are returned. Form No. 41 is a simple form of book which is in use and serves the purpose. A page is allotted to each house and opposite the size of jar or cases of bottles is noted the number of jars or cases sent out. When they are returned, the entry is struck out. This system works well enough where the wine and spirit trade is of moderate dimensions but where the trade is extensive a more elaborate system will be required.

CHAPTER XII.

HOP BOOK.—**Form 42.**

This book is for the purpose of recording the weight, price, description, and all other particulars of each parcel of hops received and used, and the balance, if any, representing the apparent or real gain or loss in weight. The form of the book and the specimen account given will probably be self explanatory. When the parcel of hops to which it relates has all been used up, the apparent gain or loss in weight will be shown. The hops, of course, are always weighed when received. As a rule, they may be found a trifle heavier than the invoice weight. The average weights of pockets of the various kinds are (about):—

English	1½ cwt. to 1¾ cwt.
Americans	The same.
Foreigners	3 cwt.

The usual tare allowances per pocket are:—

English and Americans ...	6 lbs.
Belgians	6 to 7 lbs.
Bavarians and Burgundies ...	12 to 14 lbs.
Foreigners generally... ...	8 lbs.

HOP STOCK BOOK.—**Form 43.**

A hop stock book with specimen entries including copy of a monthly balancing is given in Form No. 43. The stock may with advantage, and with little labour, be balanced more frequently than once a month, say weekly. The form of the monthly balancing given might perhaps be improved by throwing it into debit and credit shape, but that is a small matter, the important point is the balancing itself. In the example (the figures of which are actual, though names and descriptions are varied), it appears that the deficiency in weight for the month was 2 qrs. 2 lbs. This loss may be more apparent than real. There may have been slight errors in the weighings, causing the difference. Even if real, it does not follow it is preventable. As a rule the turn out on the year

should show a small surplus, which is the result of the hops absorbing moisture—perhaps 1 cwt. in 500 cwt. The turn out in particular months depends *inter alia* upon the time the hops were bought, the time they were used, and the manner in which they have been stored. Hops bought in the autumn will increase in weight till the spring. After that time they will diminish in weight, no matter how carefully they have been stored. The better the storage the slighter will be the fluctuations in weight. Hops should be kept in an air-tight store, where the temperature does not vary much, and where they will be free from draughts. The pockets should also be "strained" (tightened up) when they get slack or loose.

The item, "dry hopping 2 cwt.," in the balancing refers to the hops put in ale in cask, the operation being called dry hopping. This is not done with porter.

CHAPTER XIII.

SPIRIT STOCK BOOK.—**Form 44.**

Spirits are nearly always purchased in bond and Form No. 44 is an example of a bonded stock book in use which answers well. It records particulars of the quantity originally bought, the quantities cleared from time to time and the balance or stock in bond which should always, if possible, be verified at the close of the financial year by a letter or certificate from the bonded warehouse keeper.

CHAPTER XIV.

BARLEY DOCKET BOOK AND CRANE BOOK.—**Forms 45 and 46**

The purchasing of barley is so important that it is often done by the proprietor himself or by the Head Brewer who is very often also a maltster. In many cases a reliable and experienced corn clerk performs the duty, a general supervision being exercised by the brewer or proprietor, or both. Barley is usually bought by sample and, as it is delivered, samples from the bulk are frequently taken and compared with the sample on which the bargain was made. When a purchase has been made, the usual routine is for the crane clerk, who takes in all the barley and sees it weighed, to issue to the farmer or person by whom it is delivered a receipt for the same. These receipts are contained in books having counterfoils, both receipts and counterfoils being numbered consecutively. See Form No. 45. The receipt simply states the date, the name of the person from whom received, the weight, price and amount, and is signed by the crane clerk, the counterfoil being filled up at the same time and initialled by him. The crane clerk usually keeps a book somewhat after the form No. 46, containing particulars of the quantities received and, where there are several barley stores, each store may have its own crane book or if all the barley passes through one man or a single office, the store into which each particular lot of barley has gone should be recorded. This is important in case there should seem to be any deficiency in quantity at the end of the year.

The checks upon fraud in the weighing of the barley are in some cases more elaborate. Instead of counterfoil books, black leaf dockets are issued by a clerk who sits in the weighing office and watches the weighing of the grain by the crane clerk. The docket issued to the farmer is taken by him to the maltster who checks the price and the calculation of the amount, and it is then taken to the cash office for payment. The paid dockets are afterwards compared with the impressions in the black leaf book. Fraud in regard to quality is more likely to happen than in regard to quantity, and is much more difficult to prevent or to detect.

BARLEY PAYMENTS BOOK.—**Form 47.**

The receipt issued by the crane clerk to the person from whom the barley has been purchased, is in effect an order on the cashier of the brewery in favour of the person named for the amount stated in the docket. It is not usual, nor does it seem right, that the payment should be made by the person receiving the barley. The docket is presented to the cashier in due course, who checks the calculation and pays the amount, retaining the docket as a voucher. The details of the calculation are usually shown on the back of each docket, and when payment has been made the face of the docket is marked by an india-rubber stamp, thus :—

Paid £135 19s. 8d.
27th Oct., 1898.
A. M'Intosh, Cashier.

As there may be hundreds of transactions in the course of every day or week during the barley season, the payments made for barley are for convenience entered in a Barley Payments Book. This book gives each transaction in a single line, the date paid, barley docket number or folio, name, weight, and amount being shown. At the end of the day, week, or month, the total amount paid is taken credit for as a single item in the cash-book. When the additions of the book are made up, the average price paid during the week or month is shown.

This system is only applicable to breweries to which the barley is delivered in comparatively small lots by the farmers themselves or local merchants. Many breweries order both home and foreign barleys in large quantities from barley merchants who forward the same by rail or otherwise and invoice in the usual way. In such cases the invoices are passed through the purchase book, and ledger accounts opened for the merchants in the creditors' ledger.

BARLEY BOOK.—**Form 48.**

In many breweries the barley payment book may be found sufficient. The dockets, however, as may well be understood, are not presented to the cashier in the same

rotation in which they are issued by the crane clerk. It may be many days, and even weeks, before some of the farmers come in for payment. This rather interferes with a regular daily comparison and check, which is or should be always made of the dockets paid with the counterfoils of those issued. Accordingly in some concerns a barley book, as well as a barley payment book, is kept. The barley book is written up from the counterfoils of the dockets in the order of their number and issue. In the form given only one payment column is shown, but in some cases the right-hand side of the folio is, sometimes unnecessarily, divided into several columns, headed with the names of different months, the payments being entered in the column of the month in which they are made, the barley book thus showing the total payments each month, which should agree with the cashier's barley payment book.

BARLEY BUSHEL BOOK.

The bushel weight of barley—that is, the weight which one bushel, a measure of capacity, weighs—is one important test of the quality of the grain. Every corn clerk, or whoever buys the barley, is provided with a miniature bushelling apparatus. In many places the bushel weight of each lot, or each large lot, of barley is recorded, but experienced barley buyers can generally tell by handling and inspection what the barley will bushel. It sometimes becomes necessary at the end of the year to ascertain what was the average bushel weight of the barley bought. The same remarks apply to the malt made, which is in many cases bushelled frequently as it comes off the kiln. A quarter of barley weighing 56 lbs. to the bushel (a weight not often got) should ordinarily turn out a quarter of malt weighing 42 lbs to the bushel. In other words, the malting process should roughly reduce the weight by one-fourth. This book may be in the simplest possible form, in many cases no special ruling whatever being provided.

MALTSTER'S BOOK.—**Form 49**.

Form No. 49 is a convenient ruling for a book to be kept by the Maltster. In the column "barley received" will

be entered the stock, if any, at the commencement of the barley season and the receipts of barley into the brewery, if the barley store is under the charge of the Maltster, or, if not, the receipts of barley into the malt house from the barley store. The next column will show the date and quantity of each steep, and the difference between the totals of the columns will show the stock of barley in the barley store and malt-house, or malt-house only, according to circumstances, at any given date. The third column shows the deliveries of malt into the brewery, and the total will be the quantity of malt to be credited to malting account. At certain periods of the year it is practically impossible to know the exact quantity of malt in stock, but an approximate stock can be arrived at by adding to the quantity of barley steeped the average percentage of "increase" obtained, and deducting from the total the deliveries of malt to the brewery. At the end of the season the difference between the totals of the second and third columns, after allowing for any stock on hand, will be the "increase."

MALT BIN BOOK.—**Form 50.**

This book shews in a simple form the quantity of malt stored in each bin (the bins being usually numbered as shown) the date received, and the weight per bushel, and on the other side, the malt withdrawn for use from time to time and the date and number of the gyle for which used. The stock at any time in each and all the bins can of course be approximately ascertained by striking a balance between the figures. The actual stock may obviously vary a little from the book figure.

CHAPTER XV.

PURCHASE BOOK.—**Forms 51 and 52.**

As a rule, in manufacturing concerns, an invoice guard book is kept, the invoices being gummed on the left-hand side of the page, the right-hand side being ruled with columns (money and quantities) for the various kinds of goods purchased; or the invoices may be gummed into a separate book and numbered serially, and a purchase book kept with columns on the left-hand side for the invoice number, date, name of person from whom purchased, and the amount, the right-hand side being ruled with columns for the amounts and quantities of the various descriptions of goods. The chief purchases in a brewery are barley (or malt), saccharine, hops and coal. The purchases of barley, if made in small lots direct from the farmers, would not well lend themselves to treatment in this form, and hops are usually bought in large quantities, the transactions in any year being comparatively few in number. As a matter of practice, therefore, some breweries have a purchase-book without any special ruling. Each purchase is stated in detail (weight, price, quality, or description, &c.), and posted separately to the nominal or private ledger. The book through which the purchases are passed is in such cases called a journal, and is the posting medium for other entries as well as the purchases. The book is plainly ruled with columns for date, particulars (from whom purchased, weight, description, price, &c.), ledger folio, and amount.

Unless in special circumstances, the ordinary form of purchase book is preferable, and Forms Nos. 51 and 52 are specimens of books in actual use. The number and the headings of the analysis columns can be adapted to the requirements of the particular business.

When wines and spirits are supplied by the brewery to its tied houses, a column or columns are provided in the general purchase book in which to record the purchases.

AERATED WATER PURCHASE BOOK.—**Form 53.**

If aerated waters are manufactured, a special purchase book is generally kept somewhat in the form and with the headings of Form No. 53.

CHAPTER XVI.

CUSTOMERS LEDGER.—**Forms 54, 55 and 56.**

Three different forms of customers or beer ledgers are appended, and the merits or demerits of each may be briefly discussed.

Form No. 54 is used in connection with Sales Books similar to No. 10. The debit side contains single columns for each kind of drink and there is a single column for casks, a barrel being the unit. The credit side also gives a column for casks (expressed in barrels) returned. In this form, therefore, a customer's ledger account not only shows the cash due, but also the outstanding casks expressed in barrels. As already stated, it is not possible, however, without going to great trouble, to ascertain how many of each of the different sizes of casks are out. The form has the advantage of showing the trade done by a customer in each class of drink during the year, and by reading the terms on which this customer's trade is done, it will be seen that this is necessary, as his discount (or scorage) is 6d. per half barrel, provided the trade for the year is not less than 100 barrels. The empty casks at his debit on 31st August, 1897, were equal to 15 barrels, which, deducted from the 240¼, the total of the debit side for the year, leaves 225¼, at 6d. per half barrel, equal to £11 5s. 3d., with which he is credited. This form, or adaptations of it, is used in a fair number of breweries.

Form No. 55 is so arranged as to show the sizes of the casks out, the quality of the drink being described in the side column. Which is the better of the two is a matter of opinion and circumstance. In both cases one ledger account is made to comprise both money and casks. The casks in the breweries from which these forms are taken are not numbered.

Form No. 56 is used in connection with Sales Book No. 11, in cases where the casks are numbered, and where separate accounts are kept against customers for casks. The columns on one side of the accounts for hogsheads, barrels, &c., are not for the purpose of keeping a cask account against the customer, but for the purpose of checking the postings both

of casks and money, and also, in many cases, for the purpose already mentioned, of enabling the discount to be readily calculated at the end of the year. When the foot of a page is reached, or at intermediate rests, and at the end of the year, the chief clerk or other person deputed to the work, calculates the amount which the totals of the various sized casks debited should amount to at the standard prices of the various drinks, and sees that, (after taking off the barrels, if any, at the commencement) the amount so arrived at agrees with the total debited. This method of checking the postings, both of sizes of casks and of money value of drink, is very easy where one or two classes of drink are supplied to the customer. If a great variety of qualities were supplied the plan would not be so workable.

CHAPTER XVII.

AGENTS RETURNS.—**Forms 57 and 58.**

As a general rule, duplicate books should be kept at the brewery for sales made, cash received, and any other transactions at all agencies and depots. A separate ledger need not necessarily be kept, but the customers of all commission agents and depots should have accounts in the books of the head office. There are a number of good forms for agency returns. The best for use in any particular case will depend somewhat on the circumstances. Form No. 57, or some adaptation of it, works well in practice. The form is in three divisions or parts, and is transmitted weekly to the brewery. The first is a cash account, in which every item of cash received is entered, showing (1) the date received, (2) folio column for use at brewery, (3) names and addresses of persons from whom received, (4) receipt book number and folio (*i.e.*, number of counterfoil), (5) discount allowed, (6) cash received, and (7) observations, if any.

The second part gives the particulars of all drink delivered from the stores during the week.

The third part is a Store Account, in which the agent charges himself with all stock on hand at the beginning of the week, and the drink received from the brewery or returned by customers during the week, the totals being made and underlined; underneath, the credits are given. The drink delivered (as per details in the second part) is shown and the stock at the close of the week added. The totals of these should agree with the totals above. Special items have, of course, occasionally to be brought in. A certain quantity of drink may be used up to refill casks which have become ullaged; a cask by accident may get broken; these and other similar matters are, of course, brought in to balance.

The sales and cash transactions in these returns when received at the brewery are posted up into a Ledger to the debit or credit, as the case may be, of each customer's account. It is preferable to have the posting made direct from the returns, which are filed or fastened in a guard-book.

In other offices, the returns are used as materials for writing up a separate Sales Book and Cash Book, but it is better as a rule to post direct from the Returns.

The Ledger should contain a Cash Account for the agent. To the credit of this account the round sums he may remit or lodge in the local bank to the credit of the brewery will be placed. At the end of the week the total cash received, according to the return, is debited, the balance, if any, representing the cash in his hands at the end of the week.

If theoretical perfection could be attained, the accounts to the customers should be rendered direct from the brewery, but in this, as in many business matters, theoretical perfection must be sacrificed to practical convenience. To successfully manage a brewery and to make money against competitors only too anxious to secure good agents with connections, are operations which must often be worked out on lines different from those on which syllogisms are constructed or equations solved. If it can be done, it is well to render accounts direct and to keep as closely as possible in touch with customers, not only to render fraud impossible or difficult, but for other reasons. If this cannot be done, the agent should regularly render a list of accounts furnished, and the agency should be visited and the ledger balances and the stock on hands checked regularly. These remarks do not apply to ordinary purchasing agents.

A few illustrative entries have been made in the forms. In the case in question the agent clears up his accounts monthly by remitting a cheque for the balance. A monthly summary return is also found useful, as per Form No. 58.

In some cases the Dray Delivery Books in use at the agency are sent each week or month to the brewery to be checked with the weekly returns.

AGENTS STOCK BOOK.—**Form 59.**

All agents should keep a proper stock book, showing the date on which drink was received, the date the cask was sent out, &c., and a corresponding book for each agency is fre-

quently kept at the brewery itself. Mr. Garland's registered stock book is very useful for this purpose.

The book is somewhat on the same lines as Garland's patent numerical index.

It is made in varying size and thickness, according to the number of brands or marks used in a business. Thus, taking the marks at a brewery as follows :—

LBA, AK, AKK, XX, XXX, PA, IPA, S, SS,

the stock book would then be made in nine main divisions, as shown.

Each main division is divided into sub-divisions, lettered respectively, as required—say, "P" (pins), "F" (firkins), "K" (kilderkins), "B" (barrels), "H" (hogsheads), and each page of the book is headed, say, "Pins of LBA," "Firkins of AK," "Kilderkins of AKK," "Barrels of IPA," "Hogsheads of XX," &c., &c. The number of leaves allotted to the main divisions and the number of leaves allotted to the sub-divisions are provided as required by the purchaser, depending on the "runs of trade" of the particular brewery for which the stock book is wanted, and are apportioned as required, either in the matter of brands, or in that of sizes of casks; so that, for instance, if a business is done principally in XX or PA, and chiefly in barrels, most folios can be allotted to that brand and that size of cask.

By simply debiting any store, warehouse, or agency with the quantities sent thereto day by day, and crediting day by day the sales, and adding up the two columns, the stock on hand at any moment is exactly shown by the difference between the two totals. To illustrate the use of this stock book, assume that amongst various stock sent by a brewer to his London agency on different dates, between the 3rd and 17th February, he forwards 175 kilderkins of XX; they could be accounted for, as shown in the specimen, which displays a starting stock of 21 kilderkins on the morning of the 3rd February, and a remaining stock of only 2 kilderkins on the morning of the 17th of that month. To keep this record the clerk in charge of this stock book (whether it be kept at the brewery or the branch store), when posting the despatch of stock of kilderkins of XX, or the crediting of

sales thereof effected at the branch, would turn to Section XX, Sub-section K (kilderkins), and enter the quantities in their respective columns. Thus, a brewer or his representative can, in a second, ascertain the stock, or see the sales day by day at any of his branches or stores of any size cask of any quality he brews.

CHAPTER XVIII.

ORDER FORMS.

No goods should be ordered for the brewery except on authorised forms, which may be bound into a book in which counterfoils will be retained. All orders and counterfoils should be signed by the manager, brewer or other responsible person. In some cases a triplicate form of book is in use; one—the order itself—is sent to the firm from which the goods are ordered; the second is given to the gateman, who will allow no miscellaneous goods (save particular kinds of goods such as barley in the season) to pass unless he has this counterfoil of the order; the third copy is the usual counterfoil retained in the order book in the office.

ACCOUNTS FURNISHED BOOK.

This book is in the usual and common form, columns being provided for ledger folio, name, address, amount, and and observations. In some cases it may usefully be made to show the outstanding casks.

BALANCE BOOK.

This book will contain the balances of the ledgers. Sometimes the book is ruled in folio, the left-hand side or a portion of it, being occupied with the name, &c., of the customer, and the remainder ruled with columns to serve for half a dozen or more successive balancings. Where the ledger accounts of the customers serve for casks as well as money, as in Form 54, a column for the cask balances should be provided in the balance-book so that both cask and money balances may be taken out at the same time.

CHAPTER XIX

MONTHLY RETURNS.—**Forms 60 and 61.**

In all breweries a monthly summary of the sales, stocks, materials used, extract, and other information showing the state and progress of the concern should be prepared for submission to the proprietor, if a private concern, or to the Directors, if a public company. Form No. 60 is, with slight alterations and additions, a copy of a monthly return which is in use and works well. The circumstances of any particular case might render necessary some modification of the return now submitted. In drafting a form, the points to be observed are (1) to include the most useful information in the smallest possible compass, and (2) to draft it so that its preparation will not cause too much labour, as by aiming at too much nothing will be got, the work involved causing the whole thing to break down. The "most useful information" mentioned as the first point must always include at least all the *variable* items of the accounts as opposed to such fixed charges as rents, taxes, office salaries, &c. Where there are two or more breweries belonging to one firm or Company the customers of one may at times be supplied by the other, the supplying brewery charging the drink to the brewery which obtained the orders, and the latter brewery charging it to the customer in the usual way. In such cases, the beer might be included in the figure of sales shown by each brewery, and the total sales of the firm or company would include the amount twice. To prevent the possibility of this, drink supplied by one brewery to another, or to the customers of another, should be shown separately in the returns. So also where beer is purchased from an independent brewery (as where a porter brewery buys pale ale), the amount of such purchases and the sales in respect thereof should be shown separately, as the profit on this class of trade is usually much less than on the drink brewed by the brewery itself. Some of the figures in this return can only be matters of estimate, at least for some months of the year—the stock of malt for example and to a smaller extent, the quantities of materials used.

Directors should not be allowed to get the impression that the figures are absolute; they could not be, even if it was attempted to take stock at the date of every return, as at certain seasons of the year, say at the end of December or January an accurate stock-taking of malt is difficult if not practically impossible. The returns should be made up as accurately as possible, their object being to give the directors a good idea of the state and progress or retrogression of the business. Nothing but an actual stock-taking and balancing of the books can show what profit has been actually made, and even this as already indicated, is rather uncertain, unless at a date when stocks of malt are usually low, as at the end of August or September. It is a question whether the purchases of barley, hops, &c., might not be shown as well as the stocks, and the average prices paid; and indeed in many respects the form might be improved, though every addition involves the risk that the labour of preparing it will put it out of the range of practical business. To introduce a form of this kind into a brewery and to get it into working shape is sometimes difficult, but every month it is in operation, it becomes easier for the staff to prepare. Comparisons should not be relied on until the first twelve months have passed. The group "Working Expenses" includes the chief, but not all charges; the headings might be made more comprehensive, always bearing in mind the risk already alluded to. In very large concerns monthly returns of an elaborate nature are usually made up for the Board, but the methods of these exceptional concerns are not applicable to ordinary-sized breweries.

It is of the greatest importance that this return should show the average "extract" obtained, and also, where sugar is used, the average cost "per pound." In England, where the use of sugar, more or less, is almost universal, it would be most unsafe to place absolute reliance on the extract obtained, or assumed to have been obtained, from malt; in Ireland, where the use of sugar is very limited indeed, the extract alone is reliable enough. Without the particulars of the "extract" and the cost "per pound," the figures in

the return may very seriously mislead those for whose information and guidance they are intended. The circumstance that in any current year the barley (or malt as the case may be) has been bought at, say, 3s. or 4s. a quarter less than in the last preceding year must not be regarded as necessarily a saving. The higher-priced barley or malt may, and very often is, by reason of the greater extract obtained, actually cheaper in the result than the lower-priced goods. A system of monthly trading and profit and loss accounts and balance-sheet is sometimes recommended, but it is difficult to understand how they can be made practical, or indeed how they can be put forward without great danger. A working or brewing account as shewn in this form of Return giving the cost of the materials used less the bye-products and the duty on one side, and the selling value of the drink produced on the other, not only can, but always should be made up, but to go, monthly, into refinements as to bad debts, depreciation, discount and the hundred and one other matters that are not always easy to settle in a yearly or half-yearly account seems outside the range of practical brewery politics.

Form No. 61 is another form of return actually in use. It is not so comprehensive as the first form given, although it contains certain valuable information. The utility of monthly analyses of the cash and banking accounts is doubtful, in fact they might easily be misleading. For example, in respect of materials purchased, the payments made for barley and hops in certain months might cover a sufficient quantity to last the brewery for a very long time.

CHAPTER XX.

PRIVATE, NOMINAL OR IMPERSONAL LEDGER.

It depends upon the wishes of the proprietor or the directors whether the details of the transactions for the year should be written up in a nominal ledger, and the totals transferred at the end of the year to a private ledger in which corresponding accounts are open, and the stocks in hand at the beginning and at the end of the period recorded, or whether one ledger should contain the year's transactions, the stocks, and the result of the trading. The only object of having two ledgers is to keep private the results of the business.

The system of making the private ledger contain all the accounts necessary for a trial balance is a very good one. It necessitates the opening *inter alia* of summary accounts of the Debtors' and Creditors' Ledgers and of a cash account in which the monthly totals are all that need be shown.

The following is a list of the chief accounts which a brewer's private ledger may usefully contain, together with a few notes as to the ruling and method of working particular accounts. The rulings and method of working are so simple and will be so readily understood from the short explanations which follow, that, except in a few cases, it seems unnecessary to give specimen forms and rulings. A number of minor accounts in addition to those which follow may be required :—

1. BARLEY :—

Debit and credit sides to be provided with inner columns for weight or measure ; in England, quarters, bushels, gallons ; in Ireland, barrels, stones, pounds. All barley purchased to be debited ; barley screenings sold and other barley sales, if any, credited ; the balance after allowing for any stock of barley which may be on hand both of measure or weight and money to be transferred to the debit of malting account, the weight so transferred representing the barley steeped.

2. MALTING ACCOUNT:—

Inner columns for measure, as in barley. Barley (measure and value) to be debited from barley accounts. Separate expense accounts may be opened for (*a*) wages; (*b*) repairs; (*c*) rent, taxes and insurance; (*d*) coals (weight as well as value); (*e*) shoes, shovels, baskets and other requisites; (*f*) office expenses; (*g*) cartage, freight, &c.; (*h*) commission; (*i*) miscellaneous expenses; or one Malting Expenses Account may be opened to which all the expenses will be posted, inner analysis columns being provided for the above or similar sub-headings. In such an account the debit side may be allowed two-thirds of the entire folio. In many cases the expenses are all posted to one malting expenses account, no analysis columns being provided but the total amount analysed at the end of the year. The manner in which the analysis is made is of course merely a matter of detail.

The malting account is credited with all malt sales (measure and value), also with the malt delivered to the brewery as shown by the maltster's book (Form No. 49). If all malt delivered to the brewery from the malthouse has been mashed before the date of stock-taking, the quantity of malt so credited to the malting account will agree with the amount shown by the Brewing or Produce Book. As to the price at which malt delivered to the brewery should be credited to the malting account, one of three methods may be adopted: (*a*) crediting at the average price realised by outside sales, or if the brewery uses all the malt made, at a fair average market rate, which can readily be ascertained; (*b*) charging the brewery with the balance at the debit of the malting account, which results in the brewing department getting the malt at cost price; this method, though very common, is not one to be recommended; (*c*) crediting the malt at the cost of the barley (after screening) plus the ordinary sum per quarter allowed to maltsters who work on commission —say 5/- to 5/6 per quarter—the wages and other

expenses going against this commission, the balance remaining being regarded as the malting profit. The first and the third plans seem sound, the second is not so. The malting account is either credited with the weight and proceeds of the combings or culms—a bye-product already noticed and explained—or a separate account may be opened therefor and the balance transferred to Malting Account at the end of the year.

3. Beer Account.—

Quantities sold as well as value to be shown on the credit side. The beer brewed according to the brewing book to be debited in order to arrive at the waste, which, if above the normal percentage, should be inquired into. It is preferable to have all sales collected into a single account, with inner analysis columns for the different qualities. (See specimen account Form No. 62). It may in some cases be considered useful or necessary to show the value of the sales of each quality, as well as the quantity.

4. Yard Tap or Men's Beer.—

The beer given out as allowance to the men should be passed through the Sales Book at the end of the period as ordinary sales, and debited to this account. In many breweries no record is kept, as, for example, in the brewery from which No. 62 is taken.

5. Returned Beer and Ullages.—

Columns for quantity as well as money. In some cases the returns are so small that they are all worked off in the period in which they are returned. The quantity and value should be transferred to the debit of Brewing Account. If there is any stock on hand, it would of course require to be introduced.

6. Brewery Malt Account.—

In many breweries a small stock of malt is carried in the brewery, and in such cases an account, Brewery Malt Account, is opened to which is debited

the amount (quantity and value) of malt delivered to the Brewery from the Malt House; the malt mashed as shown by the Brewing Book is credited and the balance of the quantity column should represent the stock of malt in the brewery.

In cases where the brewery buys a portion of its malt such an account is necessary, the purchases being debited direct to it.

7. Black Malt.—

This account should also contain quantity column. The malt bought, or if roasted at the brewery, the malt used, is debited, also coal and wages for roasting. At the end of the year the balance at the debit of the account in quantity and money is transferred to the debit of Brewing Account; the quantity should agree with the quantity used per Brewing Book.

8. Sugar or Saccharine.—

Inner columns should be provided for weight. On the debit side will be stock at the commencement of, and purchases during, the year; on the credit side, the stock at the end. The balance of the weight columns represents the amount used during the year and should agree with the quantity shown by the Brewing Book.

9. Hops.—

Inner weight columns (cwts. qrs. lbs.) should be provided. Any sales are credited and at the end of the year the quantity consumed per Brewing Book should agree with the balance shown by the account. In an ale brewery the quantity used for dry hopping will also be credited.

10. Sundry Brewing Materials.—

For finings, &c. No special ruling, except in very large concerns, where the weight of the isinglass, &c., may be shown. In ordinary concerns this is not done, and is not necessary. If the charge is very high, an analysis of the account may be necessary to discover the cause.

11. Beer Duty Account.—

All duty paid during the year and any amount owing at the close will be debited to this account.

12. Grains.—

Column on credit side for weight or measure in addition to money. It is useful to insert in the account a memorandum of the number of quarters of malt mashed, the grains turned out and the ratio of the latter to the former. Grain used for feeding brewery horses should be credited as actual sales.

13. Yeast or Barm.—

Quantities should be shown.

14. Hop Cloths.—

A separate account should be opened for the sales of the empty sacks or pockets in which the hops come. They are sometimes sold at prices varying according to size and condition, but more frequently they are used up in the brewery for men's aprons, bung cloths and other purposes. Sometimes the sales (if any) are credited direct to the hop account.

As a general rule, all bye-products should have separate accounts opened for them. This prevents their being overlooked.

15. Spent Hops.—

This is not a considerable item. Spent hops are sometimes sold to, and used as manure by, market gardeners.

16. Wages.—

Form 63 is a single account, with inner analysis columns for the various classes, but separate accounts are frequently opened for brewery wages, coopers, draymen, &c.

17. Discounts and Allowances, and Commissions.—

All items in the nature of discount should be posted to a single account, and there sub-divided according to circumstances, say—

1. Ordinary Trade Discount.

2. Special Allowances.
3. Christmas Boxes.

18. Repairs.—

Here also it is perhaps preferable that all debits should go to one account in the first instance and be subdivided there in the same way as wages. A useful analysis is :—

1. Buildings.
2. Plant and machinery.
3. Tools and utensils.
4. Drays, waggons, &c.
5. Miscellaneous.

Where there are tied or managed houses a separate account should be opened to which all repairs on the tied houses of the Company should be debited. Analysis columns might be provided for :—

1. Buildings.
2. Furniture and Fittings.
3. Utensils and loose effects in managed houses.

19. Salaries.—

Nothing special in this account. Salaries are not usually apportioned between the different departments, except that of the operative brewer, which is sometimes charged to the brewing account and not to the profit and loss account. All salaries (office, brewers, travellers, &c.) should first go to the one account. Any apportionment and transfer to different accounts can be made afterwards.

20. Office Expenses.—

Includes telegrams, postages, stationery, &c. Separate accounts are sometimes opened if the concern is large.

21. Pensions.

22. Cooperage Account.—

This is usually one of the most troublesome accounts in the ledger, and the best method of working it is a matter of opinion. A good system is to debit all cooperage materials (staves, bushes, hoops, &c.), and all cooperage wages (from the General Wages Account)

and to credit the account with the new casks made at cost price, the number of new casks so made and the amount at cost being debited to the Cask Account. The balance of the Cooperage Account, after taking credit for cooperage materials in stock, would then represent the cost of repairs, re-made casks, &c., and be debited to Profit and Loss.

23. Stable Expenses.—

A single account, with analysis columns (or the analysis may be made at the end of the period), for—

1. Forage (strictly).
2. Bedding.
3. Shoeing.
4. Veterinary charges, medicine, &c.
5. Harness and stable furniture.

It may be advisable in many cases, in large breweries especially, to open separate accounts for oats, hay, and other articles used in large quantities with quantity columns in the account. Any small barley, combings, or grains used for feeding should be debited to the forage account.

24. Travelling and Agency Expenses.—

These are sometimes all brought together in a single account, like canteen expenses and a memo. of the trade done at each agency or depôt, and the expenses incurred in transacting it, drawn up at the end of the year.

25. Canteen Allowances and Expenses.—

Canteen business is specially catered for by some breweries. It is advisable to keep a separate account of all expenses relating to this trade, as the question whether it pays or not is an open one. The various expenses may be grouped under appropriate headings, which need not be indicated.

26. Coal.—

Inner analysis columns for (*a*) steam coal (weight and money); (*b*) malting coal (weight and money). Freights, cartage, &c., on coals also debited.

27. Water.

28. Light.
29. Rents of Brewery.
30. Rents of Houses.
31. Rates and Taxes.—
    1. Brewery.
    2. Houses.

    Each account should have columns for at least "Property Tax" (Income Tax under Schedule A) and "Local Rates." If all payments under the former heading are so brought together, it facilitates the work of arriving at the total value assessed under Schedule A, which amount can be deducted from the profits when the return is being made under Schedule D. In breweries with many houses a schedule of the houses showing the assessed values should be kept.
32. Licenses.—

    Analysis columns should be provided for "Managed Houses," "Brewery," and "Spirit Stores."
33. Insurance.—

    No special remark, except that a schedule of the fire insurances should be kept for convenience.
34. Advertising and Show Cards.—

    No special remark, except that where large sums have been spent in any special way during a particular year, it is sometimes difficult to decide whether the year in which the expenditure happened to be made should bear the whole charge.
35. Trade Subscriptions.
36. Freights.—

    Freight on hops, barley, &c., is often debited direct to the respective accounts, freight account then representing freight on full beer and on empties. It is very expedient to analyse the accounts under each of these headings; in some cases it is done, in others not. If all freights are posted in the first instance to a single account they should be analysed under (*a*) hops; (*b*) coal; (*c*) malt; (*d*) full beer; (*e*) empties, &c.
37. Bank Charges (not Bank Interest).
38. Law Costs.

39. Bad Debts.

40. Miscellaneous Trade Expenses.

41. Cask Account.—

Like the cooperage account this is one of the most troublesome in the ledger, and the various methods of keeping it and dealing with depreciation have already been discussed in Chapter IX.

42. Secretary's or Registrar's Office Expenses.—

This account is frequently kept where an outside secretary or registrar keeps the share, dividend and minute books, attends Board meetings, &c.

43. Income Tax.—

Debited with the amount paid Inland Revenue, credited with deductions from dividends. Balance, if any, written off to profit and loss. Many breweries overpay income-tax, especially through not claiming deductions to which they are entitled for income-tax paid under Schedule A, but the subject is too wide for treatment here. "A Guide to Income Tax Practice" by Murray and Carter (Gee & Co., 62, Moorgate Street, E.C.), is one of the best hand-books that can be consulted.

44. Horses.—

Number of horses should be recorded, re-valued at the end of each year and difference written off. A yearly re-valuation is almost preferable in this case to writing off depreciation, it being seen, of course, that each year's trading is debited with a fair sum for the wear and tear of the horses. The closing qualification is very important, for if a re-valuation be taken alone it will be found that managers are difficult to persuade that a horse of say six years of age, is not as valuable to-day as it was a year ago, and for three or four years of the prime of a horse's life the valuation may be apt to remain unchanged.

45. Drays, Waggons, &c.—

The principle of yearly re-valuations is frequently adopted, but an annual charge for fair wear and tear should always be insisted on.

46. LOANS.—

Separate account for each. A memorandum of the rate of interest on loan, due dates, and conditions as to the re-payment of principal should be recorded at the head of each account.

47. INTEREST ON LOANS.—

No special remarks. Sometimes all interest credited to one account; in other cases, interest accounts opened for each loan; and in others, one account serves for principal and interest, the amount of the latter being transferred to the credit of a general interest account at the end of the year.

48. Various other accounts will be required, such as a Depreciation Account, and others may or may not be needed according to circumstances, such as accounts for the partners of a private concern, or for the Share Capital Debenture Stock and Dividend Accounts of a Joint Stock Company.

CHAPTER XXI.

THE ANNUAL ACCOUNTS.

The *pro forma* statement of accounts (Form No, 64) comprises the following :—

(*a*) Beer Account.
(*b*) Brewing Account.
(*c*) Profit and Loss Account.
(*d*) Barley Account.
(*e*) Malting Account.
(*f*) General Profit and Loss Account.
(*g*) Balance-sheet.

The figures in these accounts are purely imaginary, and have no relations, even remotely, to any particular brewery. To any one familiar with brewing accounts this will be apparent, but it is perhaps desirable to expressly mention it.

(*a*) BEER ACCOUNT.

This has been designed to work out a figure with which the quantities and cost of the materials used may be compared, and percentages arrived at. The same thing can be done by making a series of additions and subtractions on the credit side of the brewing account, but it is plainer to give the figures in a separate part and show them in debit and credit form. A more important purpose which this account serves is to bring together the quantities from the brewing book and the quantities from the sales book, with the stocks on hand at the beginning and end of the period, and thus show the waste between the collection of the worts in the fermenting tuns, and the beer actually sold. The prices at which the stocks of drink are valued include working expenses. If, therefore, the stocks fluctuated greatly it is evident that the balance of this account would not truly represent what it is intended to show—namely, the ordinary selling value of the drink produced during the period. The value of the stock would have to be analysed, and that portion of it representing the cost of the materials and duty only included in the beer

account. In practice the stocks as a rule vary very little, particularly if the accounts are made up yearly to the same date.

(*b*) BREWING ACCOUNT.

This account commences on the credit side with what may be regarded as the amount realised for the beer produced by the materials debited on the other side. The account is strictly limited to materials and duty. No wages, discounts, or other items appear in it. The balance of the account, therefore, represents the difference between the selling price of the drink and the cost of the ingredients actually used, and the duty. The quantities of malt, hops, grains, &c., are shown in addition to value. If the brewery were on a very large scale, the line "finings and sundry brewing materials" should be sub-divided into several headings, but in an ordinary case this may not be necessary.

Both the beer account and the brewing account may be arranged with sets of columns, to show the sales and the materials and duty for each description of drink brewed; also, where two or more breweries are owned by the same company, it is convenient, and useful for comparison, to give the respective items for each brewery in parallel columns, so that they may be compared. It is always a great advantage, if it does not involve too much trouble, to show the different kinds of drink in separate columns. It helps to detect a species of fraud which is now and then met with—namely, XX being passed out as X, or stout being passed out as plain porter.

If different classes of trade are done *e.g.*, free, tied (let houses), managed houses, canteen, export, &c. it is very important to show the amount of each class in barrels and money. Not only is this necessary in order to show fluctuations in the volume of any particular class of trade, it is frequently necessary to enable adjustments to be made by which alone accurate percentages may be based on the sales. Beer supplied to managed houses should be invoiced at or near selling price, export or canteen beer will probably be invoiced at different rates from free trade, and consequently before any accurate percentages can be based on the sales it

will be necessary to arrive at a new figure of sales calculating all beer at, say, the prices to the free customers.

The operations contained in the Beer and Brewing Accounts just described, are sometimes set out in four divisions (Form No. 65), namely, Beer Production Account, Beer Stock Account, Returned Beer Stock Account, and Trading Account. There is not much to choose between the systems; if anything the latter is more theoretically accurate in dealing with Returned Beer.

(*c*) PROFIT AND LOSS ACCOUNT.

This account contains on the credit side the balance brought from the brewing account, and also, in the case in question, a small item for profit made on beer purchased by the brewery from other breweries, and resold. This may happen, for instance, where a pale ale brewery gets an order for pale ale and stout, and the latter is supplied by a porter brewery, or a porter brewery may get an order for pale ale and stout, and may instruct a pale ale brewery to send on the ale, a discount being allowed to the brewer who obtains the order. The debit side contains the wages, discounts, rents, freights, stable expenses. cooperage, provision for bad debts and all other charges.

There may be differences of opinion as to how the items should be grouped, and probably in no two breweries will the groupings or the headings be identical. The form given embodies the headings and groupings of several breweries and at least indicates the lines on which such accounts should be constructed. In the case of beer exported, or shipped as ship's stores, the drawback should be credited to the profit and loss account.

(*d*) BARLEY ACCOUNT.

The fictitious company whose accounts are under consideration not only make all the malt they themselves require, but have a surplus for sale. As already stated, the barley account should always be kept separate and distinct from the malt account. The debit side of the account

contains simply the barley purchased, both quantity and value, in some cases with the addition of the freight. On the credit side is shown the small barley screened and sold off or used in the brewery for forage. The balance represents the barley passed to the malt-house to be steeped. It will be observed that in this account and in the malting account, no stocks are shown on hand, either at the commencement or at the end. This is due to the fact that in many breweries, particularly in those which have ordinary maltings, the accounts are framed so as to show the completed transactions for the whole season. Of course, if there are stocks on hand they should be valued at cost. The cost price of the barley is the invoice price plus carriage, and the cost price of malt is arrived at by taking the price of the barley and adding, say, 5/6 per quarter for making.

(*e*) MALTING ACCOUNT.

This account also shows quantities as well as values. The charges are worked out to so much per quarter on the out-turn of malt. The malt used in the brewery is in this case charged at the average price obtained for outside sales, less the delivery charges, say 1/10. In the case in question, there would be no stock on hand on this account, the brewery having been charged with all. This is likely to cause a technical error, as the stocks in the brewery will be valued at the cost to the brewery, which in this case is the selling price. In practice, and having regard to the date on which most breweries close their books, this error is very trifling.

In some breweries the malting account at the end of the financial year is credited with the *book* stock, the actual stock being ascertained as closely as possible, but only in order that it may be seen that the actual stock exceeds the book stock, no increase in the malt being taken credit for until the stock is actually used.

(*f*) GENERAL PROFIT AND LOSS ACCOUNT.

This account calls for very little remark. The undistributed balance from the previous year is shown separately, and to it are added the net profit from the brewing and malting

accounts, the interest on investments, the rents, &c., from tied houses, less the outgoings and the transfer fees. Against it are debited the management expenses, directors' fees, income tax, &c., working out a net balance as shown in the balance sheet to be dealt with at the general meeting.

(*g*) BALANCE SHEET.

This is in the common form and presents no special features. The outlay on improvements and additions should always be shown separately from the original purchase money. Stocks should be taken at or under cost prices. The methods of dealing with casks, horses, &c., have been already discussed.

CHAPTER XXII.

TIED HOUSES.

"Tied" and "Managed" Houses have been frequently mentioned in connection with the books and accounts, but having regard to the circumstance that the bulk of the brewing trade in England is now "tied" it seems desirable to bring together under a single heading some considerations which arise in regard to both "tied" and "managed" houses.

As the name implies, "tied" houses are licensed houses the tenants or holders of which are bound to buy some or the whole of their beers, wines, spirits, mineral waters, &c., from a particular brewery.

The system has grown largely of late years, due probably, in the first instance to the stress of competition and afterwards continued and extended owing to the stability which the possession of a number of tied houses gives to the trade of a brewery and to the increased profits which can be obtained from tied as compared with free trade.

The result is that even privately owned breweries have large numbers of such houses, and in England at least (with the possible exception of a few provincial breweries which make a speciality of supplying beer direct to private customers) the prospectus of any Brewery Company which did not set forth the number of its houses, and the valuation of the same, would have little chance of obtaining a favourable reception from the public. The high value now put upon licensed properties enables a company to issue (proportionate to its earning power) a comparatively large amount of Debenture Stock at a low rate of interest. The rents alone derived from the houses frequently cover the interest on Debenture Stock, and the profit on the beer becomes available for dividend on the share capital of the Company.

Houses are usually "tied" in one of two ways, viz.:—(1) The brewery acquires the freehold or lease of houses and lets them to tenants who pay rent therefor, or (2) the brewery makes a loan to the holder of a license to enable him

to pay his valuation on entry, or for some other purpose, which loan may be secured by a bill of sale, promissory note, or otherwise. In Scotland, the practice is for the tenant to purchase the house, and to accept a bill drawn by the brewer or distiller for the greater part of the purchase money, the brewer or distiller discounting the bill.

In all cases the licenses are granted to the tenants or managers, and as the law does not recognise any dual interest in a licensed house, the acts of a tenant or manager who brings himself within the Licensing Acts may entail considerable loss on the brewery through the license being endorsed or altogether withdrawn.

The danger of loss to the owners of licensed premises from the misdeeds or negligence or bankruptcy of their tenants or managers is very real and the tenancy agreements must be drawn with the greatest care. This, being a pure matter of brewery management, cannot be gone into here, but it is very fully and ably discussed in Mr. Howard Tripp's book on " Brewery Management."

Against the risks attaching to tied or managed houses must be placed the increased profits to be derived from the trade as compared with the profits of " free " trade. In tied trade smaller discounts are allowed, there is a much smaller proportion of returned drink, there is less expense for travellers, little or no advertising is required, more " runs " are got out of the casks, and in many other ways the profits are either directly increased or the expenses reduced.

There is no substantial difference between the books of a brewery doing a tied trade and those of one doing a free trade. The ordinary Sales Books are perfectly adapted to record sales to let houses, and the trade accounts of the tenants will be in the ordinary form. As a matter of convenience it is advisable to have a separate Sales Book and Ledger so that the amount of the trade and the balances due on trade accounts of tenants may be readily ascertained.

As to the rents, a rent ledger is generally kept in which the rents are debited to the tenants when due and the cash received credited from the cash book. If the rents are regularly paid, and such rents generally are, they can be re-

corded in the form of an ordinary estate rental, and one ledger account in the nominal ledger could be made to include all amounts.

It would be well to have a separate column in the discount account for the tied trade, because the rates being all lower than in free trade, any attempt to compare the percentage of total discount on total sales in any one year with another would be nullified by any fluctuation in the proportions of free and tied trades.

All repairs, taxes, or other payments on account of houses should have separate accounts in the nominal ledger, and not be included under the accounts of the same names for the brewery.

There should be a loan ledger for all loan accounts, and it is well to provide a few lines at the top of each account in which the nature of the security, the rate and the due dates of interest and the date when the principal becomes repayable can be shown.

In the Sales Account in the nominal ledger of a Company doing free trade and tied trade with let and managed houses, there should be three analysis columns, showing the amount of trade done under each heading.

CHAPTER XXIII.

MANAGED HOUSES.

Where from choice or (as in most cases) from inability to obtain a suitable tenant, a brewer puts his own servant into a licensed house to work and manage it, the house is shortly described as "managed."

The selection of a Manager is a matter demanding considerable care. Not only is the position such that a man may easily drift into careless and intemperate habits, but the impossibility of ascertaining exactly the amount of the takings opens the door to dishonesty. Cases are not unknown where Managers supply a beer of lower gravity than that paid for, and put the difference in price in their pocket. This is a species of fraud which is very difficult to discover, and very often the first indication of it to the brewery is that the sales of the house commence to decrease. Another reason for the careful selection of a Manager is that any carelessness or indiscretion on his part may lead to the endorsement, or loss, of the license.

It is usual to have an agreement with the Manager. The terms of the agreement vary in different breweries and in different districts, but the following provisions are generally embodied:—

1. The license to be transferred into the name of the Manager, he binding himself to re-transfer it to the Company when required so to do, notwithstanding any questions which may be open between him and the Company.

2. A deposit to be lodged by the Manager by way of fidelity guarantee.

3. The Manager to keep accounts regularly and obey all instructions received from the Company.

4. The Manager not to contract any debts in the name or on behalf of the Company.

5. The Manager agrees that the occupation of the house attached to the licensed premises is not to be regarded as part of his salary, but that he is there on

sufferance, the Company having the right of entry at any reasonable time.

6. In the event of the Manager leaving the employment of the Company, he will not for one year thereafter be interested or employed in any capacity in any licensed house within a radius of one mile of the house of which he had been Manager.

7. The Manager to conform to the licensing laws.

There is generally a deed attached to the agreement by which the Manager appoints one of the Company's officials as his attorney or agent to apply for a transfer of the license, to attend licensing courts, and generally to do anything necessary to have the license transferred into the name of another nominee of the Company.

It is doubtful whether the Manager of a beerhouse for the sale of beer to be consumed "off" the premises fulfils the requirements of Section I. of the Beerhouse Act, 1840, which enacts that a license shall only be granted to the "real resident holder and occupier" of the licensed premises.

A small Accounts Book is usually supplied to the Manager, in the front of which are printed more detailed rules and instructions. The following is a copy of a set of rules now in use:—

RULES AND INSTRUCTIONS.

You must distinctly understand that the house belongs to the Moorfields Breweries, Limited, and that you are here subject to you being honest, steady and obliging to your customers and attentive to your duties.

Your employers reserve to themselves the right to give you any notice whatever of their intention to dispense with your services, should they consider that you are either unsuitable for your duties or that you are not complying with these Rules.

The Company do not permit credit being given to anyone.

Upon no account must you allow drunken persons to remain on the premises, or sell or supply them with **anything whatsoever.** In the event of being deceived, return the money and request the person to leave the premises at once.

If the police should make any charge of drunkenness, and there be any doubt as to the condition of the person so charged, the manager or barman will detain the person, call the

attention of the customers present to the person's condition, and ascertain their names and addresses. Notice the time, and ask the customers to note any conversation that passes on the subject, and, as **early as convenient,** take the person to the nearest doctor, and again note the time, which is very important. Report the circumstances immediately at the Company's head office.

Upon no pretext serve a policeman in uniform, unless you are of opinion or have reasonable proof that he is off duty.

Betting or gambling in any form is not to be permitted.

Neither managers or barmen are to smoke in the bar or bar-parlours.

Disorderly persons are not to be encouraged to frequent the house, nor on any account allowed to come and go without their intention is to get refreshments, in which case they must not remain longer than is reasonable for consuming those refreshments.

Music, dancing, singing, except where licensed or allowed by the Justices, and **bad language** are to be strictly forbidden.

Neither managers or barmen are to be out except by permission of the Superintendent.

Managers or barmen are not to receive any money or valuables for safe keeping, nor act as treasurers for or on behalf of any society or club without special consent in writing from the Company.

Managers are not allowed to pledge the credit of the firm, or purchase goods, whether for sale or otherwise, without special instructions in writing, and for such purposes vouchers and receipts must be produced.

Managers must not permit young children behind the ba nor in the public rooms, nor the elder ones or any other person, however experienced, to take part in the business unless authorised. Infringement of this rule, untidiness and disregard for cleanliness in anything connected with the trade, will be regarded as urgent reasons for instant change of management.

Waste in serving beer and spirits must be carefully avoided, and managers will be held responsible for all the beer returned in casks through improper draining. "Tops and bottoms" will not be tolerated.

Managers must not lend jugs, cups, glasses or bottles to customers without a deposit.

The counter, tables, and whatever ledges are used for cups and glasses must be wiped over with a wet cloth, and all dirty jugs and glasses must be washed, dried, and returned to the shelves before leaving the bar for the night.

Managers must study economy in the consumption of gas and coal, leaving only so many lights on and after closing as are

absolutely necessary for straightening the bar, and turning the gas off at the meter before retiring to bed.

Managers must not keep pigeons or rabbits in the house.

In case of fire or serious accident **send at once** to the Company's **Head** Office.

Accident to plate glass to be reported on the same day with full particulars of the occurrence.

IMPORTANT.

The cash takings to be counted (coppers as well) at the times named on this sheet, and entered at once in ink, and it is hoped that managers will not plead any excuse for not doing so.

This Book is the property of the Moorfields Breweries, Limited, and I hereby undertake to return it to them, or their nominee, whenever called upon to do so, and whilst in my possession to keep it out of the reach of servants and strangers, and not to disclose its contents to anyone without authority.

(Signature)_____

_____ 18 .

The ruling of the accounts part of the book is given in Form No. 66. The book is written up from day to day. The disbursements consist of purchases of bottled goods, tobacco and coals, and expenses, such as gas, water wages, &c. Of course, in many cases bottled goods and tobacco are supplied by the brewery and in such cases the amount of the disbursements will be reduced. It is well to limit a manager to certain firms from whom he can purchase, and in the Accounts' Book already referred to, a page is set aside to contain such instructions, the book being ruled as follows:—

ARTICLE.	FROM WHOM.	TERMS.	REMARKS.

An inspector from the head office of the Company should call at every managed house at least once a week. It is only by careful supervision that good results can be obtained. On an appointed day of each week he should call and receive the surplus of drawings over expenditure for the preceding week with a statement (Form 67) signed by the Manager showing how the same is made up. It will be seen that particulars are given on the back of the statement of all goods received and not paid for. As managers are expressly forbidden to pledge the credit of the firm, all the goods so received will have been received either direct from the brewery or from firms who will invoice them to the brewery. In the former case the particulars can be checked in the Company's office with the ledger account of the house, and in the latter case they enable the invoices from outside firms to be checked.

When the managed house is an hotel with bedrooms and restaurant, the above form of return is not suitable, and another form, No. 68, is sometimes used. The form of return for an hotel is largely governed by the size of the house and the class of business done, the form under review being of little value in the case of an hotel doing a large bedroom and restaurant business.

The inspector should examine the statement and make enquiries on any matters arising thereon. He should, at the end of the week, make up a list showing the gross takings and the expenses for each house, and his lodgments in the bank, or the cash handed by him into the office, should, of course, agree with the net takings. These sheets should be ruled, and the name of each house printed. In this way the names of the houses will regularly recur each week in the same order. The accounts in the managed house ledger will follow in the same order. The postings may be made direct from the sheets and the totals only dealt with in the cash book (see Form 69). If done in this way the clerical labour is immensely simplified and reduced. These remarks also apply to the travellers who call on tied houses. In regard both to tied and managed houses, regular days for delivery and returns from travellers and inspectors with the names always in the same order are points to be aimed at.

The stock in managed houses should be taken periodically by the inspectors, at least once a quarter. Form No. 70 is a specimen of stock sheet in use. On the date of stock-taking the amount of debts if any, due to the house must be ascertained, and also the amount of cash, if any, in the hands of the manager. The amounts of the stock, debts and cash will be passed through the brewery books, and the balance remaining on the ledger account of the managed house will be the apparent profit or loss for the period. As the entries in the ledger account will be weekly amounts, it is well to throw the account into a summarised form, as shown by Form No. 72, and by bringing the figures for successive periods into parallel columns comparisons can conveniently be made.

Form No. 71 is a convenient form of ledger account for managed houses, and Form No. 72 gives a quarterly and yearly summary thereof. The amount of profit or loss appearing on the account will depend entirely on the price at which the goods have been invoiced to the house. Some breweries invoice all goods as nearly as possible at retail prices, and in such cases the account should show a loss of at least the amount of the expenses. The temptations to dishonesty amongst managers of managed houses are obviously very great, and in many cases it is extremely difficult to discover an effective check. In Dublin, the system of charging houses with the retail price of the goods answers admirably, and is now extensively used there. Forms No. 73 and 74 are copies of two quarterly accounts made up in this way, and from the small differences shewn it will be seen how accurately the system works there. The nature of the business transacted in an ordinary public-house in a city like Dublin is such, however, as to make the application of the retail system comparatively easy. Two articles, stout and whisky, probably form 90 per cent. of the entire business, and the stout will in most cases be one particular brand, sold by imperial or fixed measure, and the whisky for the most part one or two brands, also sold by fixed measure. In England, the conditions in many districts are widely different from this simplicity. (*a*) The trade done is divided into a great many more classes of alcoholic drinks, and more qualities of each

class, as, for instance, of ale there may be three or four qualities. (*b*) The "long pull" is given in many districts in respect of beer consumed "off" the premises; in few, if any, cases is it given in respect of beer consumed "on" the premises, and, as it is impossible to ascertain the exact proportion of "off" and "on" trade, an estimate or guess would have to be made, which, of course, would seriously affect the weight to be attached to a retail account which on an estimate of that kind showed a deficiency. (*c*) In many cases the Managers have a discretion to mix the beers where they give the "long pull"—that is to say, a pint of any single X beer "long pull" would consist of one pint imperial measure of X beer with about half a pint of a slightly lighter beer added. (*d*) In some districts, the Black Country for example, whisky and other spirits are not only sold by imperial measure, but certain conventional measures (such as a "threepennyworth" measure) are in use. A proportion of the spirit trade, therefore, is done in imperial measure, another proportion is done by a different measurement, and it is, of course, impossible to ascertain the proportions of each. It will therefore be apparent that the retail system of accounting is most difficult to apply in many cases, and the results shown by it cannot be relied upon. The difficulty, in fact, of getting honest returns from the houses is (apart from the objection sometimes taken by the licensing authorities to grant licenses to managed houses) perhaps the chief reason why brewers, as a very general rule, dread having managed houses. On the other hand, in the comparatively few localities where brewers have gone in for managed houses as a system, and where they may be supposed to have thoroughly studied the problems they present, and to have given special attention to selecting, overseeing, and checking managers, the financial results have more than justified their choice, and compensated them for their trouble. There are some brewers who would not think for one moment of letting a house; the majority would be very uneasy if it appeared likely that they would have to put a house under management. In short, the results of managed houses seem to exclude a medium; they are either an unqualified business success, or an unqualified business

failure. They are usually the former if the brewer understands how to work them, and lays himself out to put his houses under management; they are almost always the latter when there are a few odd managed houses owned in common with a number of tied let houses.

Where the system of charging out at retail prices is applied, the retail accounts are kept altogether independent of, and outside, the ordinary counting-house books.

In some cases "Cash Registers" can be introduced, and wherever they can, their initial cost will very speedily be made up by the increased returns which very frequently, if not almost invariably, result from their adoption. In houses, however, where customers can be served at different bars or in different rooms (such as smoke room, billiard room, &c.), their effectiveness as a check on dishonesty will obviously not be great.

CHAPTER XXIV.

INVESTIGATIONS.

The ordinary routine work involved in the audit of brewery accounts does not differ from that involved in the audit of any other commercial concern. It will be seen from the foregoing pages that with a properly arranged set of Produce and Quantity Books the chief items in a brewery account can be brought together so as to effectually check the accuracy of the figures. For example, a proper Brewing or Produce Book should enable the figures shown in the financial or counting-house books to be checked as regards the materials used, the duty paid and the drink produced, and it is needless to observe that if (as is most often the case) the brewer who keeps the Brewing Book has nothing to do with the counting-house books, a check of this kind is extremely valuable and perhaps as effective as if the items in the financial books were vouched in the ordinary way by vouchers. The Sales Books may in many cases be so arranged that the accuracy of the additions may be automatically checked. The ledgers may, and in the absence of special reasons should, always be made to separately balance. The design of an accountant or an auditor should be to introduce all labour-saving devices so as to minimise the work of the counting-house staff, and to also relieve him of what, in many cases, is tiresome and useless checking and leave him more time and freedom for more important work.

The routine of the audit being therefore very similar to the routine observed in commercial audits generally, it is not proposed to enter at any length into a subject upon which the writer could contribute nothing fresh. Accountants, however, are sometimes called upon to specially investigate the accounts of a brewery. The trading results may have been disappointing; there may be dissatisfaction with the management; carelessness and it may be fraud have been alleged; and for these or other reasons an accountant may be called in to make an examination and report which could not in many cases be complete, if it was limited to the ordinary counting-house

books. The subjoined paragraphs indicate some of the points which, in cases where the circumstances are as mentioned, may repay enquiry.

BARLEY ACCOUNT.

The proportion which the screenings and small barley bear to the total purchases should be looked at. The proportion varies from year to year, but as a general rule the screenings should not exceed 2 per cent., especially if the maltings are connected with the brewery, in which case steam power and proper screening machinery can be efficiently worked. If the screenings of home barley exceed 2 per cent. it would be a matter for enquiry whether the barley used was well bought.

The average price paid for the barley should also be looked at, but unless the person investigating has a fair knowledge of what is paid in other breweries in the same or in similar neighbourhoods and in the same year, it would be unsafe for him to draw any conclusions. Indeed, the price of barley considered alone is in all cases a very unsafe basis for inference. Barley costing, say, 30s. per quarter may, by reason of the greater extract yielded by it, be actually cheaper than barley bought at 28s. per quarter. In comparing prices of barley, therefore, it is not so much the cost prices per quarter which should be looked at, but the cost to the brewery per "pound" of extract obtained, as dealt with later on. On page 235 will be found a table extracted from *The Times* of August 21st, 1899, showing the home production and the average price of barley for the fourteen years 1885 to 1898 inclusive.

MALTING ACCOUNT.

The steep capacity and the number of steeps obtained in the season are matters which should be enquired into. Rent and other standing expenses, and a certain amount of wages, will be the same, whatever number of steeps is obtained during the season, and it is therefore important to see that the best use possible is made of the steep capacity.

Generally speaking, a quarter of barley, which weighs 448 lbs., should yield a quarter of malt, which weighs about

336 lbs. To look for any large increase would be bad malting, but it is usual to look for an increase of 2 to 4 per cent., that is to say, to make 102 or 104 quarters of malt for every 100 quarters of barley steeped. If this is not obtained the matter requires inquiry, which might be directed as follows:—

(*a*) Although it is by no means of frequent occurrence, it has happened that a corn clerk or buyer has conspired with the farmers or merchants to defraud the Company by taking delivery of barley into the brewery which is either short in weight or of an inferior quality to the sample on which the barley was bought. It may be difficult, if not impossible, for the accountant to tell if the quality of the barley was what it ought to have been, but the record of the various checks on the weight of the grain may throw some light on the matter of quantity. For example: If the barley books are kept in the form set out in the appendix it would be possible to ascertain the quantity of barley sent into a particular store, and as the barley delivered out of the store is usually recorded in a memorandum book called the steep book or other appropriate name, it should be possible to ascertain whether the quantity purported to have been put into the store was delivered out of it.

(*b*) The circumstance whether the barley is home grown or foreign will affect the percentage of increase. Some light foreign barleys yield a considerable increase, sometimes as much as from 6 to 7 per cent., or even more, which is, no doubt, largely due to their greater dryness as compared with home-grown grain, and to the fact that the skin (the weight of which does not decrease in malting) represents a much larger proportion of the total weight than it does in the heavy home grown grain.

(*c*) The average bushel weight of the barley should be compared with the average bushel weight of the malt. The standard weight of barley is taken at 56 lbs. to the bushel and at that weight should yield

a bushel (42 lbs.) of malt. As a general rule less than a full fourth is taken out of the barley by malting. Barley at 54, for example, may be worked to make malt at 41½ to 42, barley at 53 to 41 or 41½. and so on. In cases where the figures are in about these proportions, it will be evident that an increase should be shown in the manufacture. If the bushel weights have been recorded in a book, the book should be referred to.

(*d*) Malt taken from the kiln hot will weigh less than if it is allowed to cool for seven or eight days, and the difference which this alone effects is very appreciable. It might especially arise on malt made in a malt-house situated close to the brewery to which the malt is to be delivered. In the case of country malt-houses, where the malt has to travel some distance before it arrives at its destination, this cause should not operate to the same extent, because even if sent from the malt-house hot it should be weighed closely, and by the time it arrives at the brewery it would be full weight.

(*e*) Sometimes the quantity of malt is not correctly ascertained before it is delivered. Carelessness on the part of his men in this matter is occasionally detected by an active maltster. It sometimes happens that if the malt put out for delivery is re-weighed the overweight may amount to 2 or 3 per cent. of the quantity.

(*f*) In nearly all barley there is a certain number of the grains which will not germinate, and which are called "idlers." About 2 per cent. would be expected in fair average barley, but if the barley is bad it may reach 10 per cent., or more. If the barley is kept over a season, the percentage of "idlers" will usually be found to have increased. The percentage is usually arrived at by simply taking up a handful of malt here and there from the floor, counting the total number of grains, setting on one side the "idlers" and seeing the proportion which the latter bear to the total number counted.

The "idlers" would not diminish the out-put of malt as compared with barley steeped, rather the contrary, but they would affect the price obtained for the malt.

(*g*) An apparent deficiency or an apparent increase in the malt over the barley steeped may arise from the circumstance that the stock of malt either at the beginning or at the end of the period was merely estimated and not properly measured up. In all cases, both in ordinary accounts as well as in investigations, enquiry should be made as to how the stocks of malt were ascertained. Any appreciable increase, say anything beyond 2 to 4 per cent. in malt made from home grown grain, should instantly put an accountant on his guard. Speaking generally it can only arise from badly made malt or from an error in the stocks.

COMBINGS.

There is often carelessness either in looking after the stock of or in selling bye products, and the proportion which the weight of the combings or culms bears to the weight of the malt made should be ascertained. It may vary from 2½ per cent. to nearly 4 per cent., but it should be nearer the latter than the former. The price varies according to local circumstances, but from 50s. to 70s. per ton is frequently obtained. The average price should be nearer the latter than the former figure.

WAGES.

The average amount of wages paid per quarter of malt should be ascertained. It should be about 1s. 4d. to 1s. 8d., and any excess over 1s. 8d. should be enquired into. It may be found to be due to one or other of the causes following:—

(*a*) To inefficient labour. In a house with a steep of 50 quarters, four malt men may work it in one case; in others it may require six. Each man should on the average work not less than 12 or 15 quarters; in some cases it is as low as 8, in others as high as 18 to 20. Other labour would of course be required in addition to the maltmen, but this is included in the

1s. 8d. In pneumatic maltings the cost will be found to be lower probably from 1s. 2d. to 1s. 4d.

(*b*) To the bad construction and arrangement of the malt-house and barley and malt stores. A badly arranged house involves much more labour and expense in handling the grain than one where everything is arranged to minimise and economise labour.

(*c*) To the circumstance that the malting instead of being carried on in one or two fair-sized malt-houses has been carried on in a number of small houses. The average cost of working a malt-house such as that in Cook's Lane, Dublin, belonging to Messrs. Guinness, where there are three steeps capable of wetting between them at one time 600 quarters of barley, could hardly be compared with the average cost of working some half-dozen or dozen little malthouses, with average steeps of 10 to 20 quarters, which are sometimes found attached to country breweries.

FORM OF MALTING ACCOUNT.

In certain circumstances, the form in which the malting account is drawn up becomes very important. It is frequently the case that brewers sell malt to outsiders, and sometimes they do not confine themselves to selling malt of their own making, but they buy malt to sell over again. In such cases it is found that the brewery uses part of its own malt and part of the purchased malt. When this occurs the malting account can be prepared in such a way as to effectually obscure the facts. This may be done either from ignorance or otherwise. An analysis of the accounts may disclose that the outside sales have been effected at a loss.

COAL CONSUMPTION.

One ton of coal should work from 30 to 35 quarters of malt, including kiln-drying of the barley, which does not take much coal. If less than 32 quarters are turned out per ton of coal there is either mismanagement, or the kilns are badly constructed. The most striking contrasts are sometimes seen not only between one maltster's consumption of coal and that

of another, but even between two houses owned by the same man—27 quarters may be got in one house and 35 in another. The coal used is of a very expensive kind, and its proper and economical consumption is therefore a very important matter.

FREIGHT.

Freight, cartage, &c., depend on circumstances varying in every case, but they should always be tested. No rule of course can be laid down as some breweries deliver the bulk of their beer by their own drays, and others only a small portion, the bulk being delivered by rail or otherwise.

BEER ACCOUNT.

The percentage of waste should be ascertained, and if it appears unduly heavy enquiry should be made. The deficiency called "waste" arises from one or other, or perhaps all, of the causes following:—

(*a*) The waste, rightly so called, during the fermentation; the loss in running the drink from one vessel to another, and in racking the beer; and the retention by the spent hops of a certain quantity of liquor.

(*b*) The fact that the casks may contain more than the standard quantity. The question of cask measurement is an important one, and in all breweries the casks should be regularly tested by water, not merely by dry measurement.

(*c*) If a large hogshead trade is done, and the quantities are worked out to barrels, an appreciable difference will be caused in Irish breweries by taking the hogshead at 1½ barrels (48 gallons) as the standard measure of an Irish hogshead is 52 gallons. It would be better for Irish brewers to express their quantities in gallons rather than in barrels, as truer figures would result.

(*d*) Careless cleansing of the beer, whereby a larger quantity of drink than necessary is skimmed off with the barm. Although the barm may be afterwards

pressed and the worts used up again, a certain loss occurs.

(*e*) The fact that in some cases the barm is sold in a liquid state and is not pressed. This is the source to which, as a rule, the greatest proportion of the entire waste in a brewery may be attributed. The methods of cleansing beer are so varied that it would be unsafe to lay down any general rule as to the waste caused where the barm is not pressed. In a brewery with a 35-quarter plant, the drink pressed out of the barm of each brewing of 170 barrels has been known to reach four to five barrels per brewing, equivalent to, say, 2½ per cent. A somewhat lower average might be taken as generally applicable, but the waste depends upon the circumstances of each case. In most breweries for example, the vessel in which the worts are collected after leaving the cooler or refrigerator is the vessel in which the entire fermentation takes place, the barm being skimmed off the top of the drink from time to time. But in some breweries the worts, after fermentation has proceeded a certain length in the fermenting vessel, are allowed to run down, or, as it is termed, are "dropped" into a second fermenting vessel situated on the floor beneath that on which the first vessel stands. Where this method of "dropping" the beer is in operation, the quantity of liquor from the barm, if pressed, would not perhaps be so great as it otherwise would be.

(*f*) The fact that in some cases the worts from the barm press are not used, under the belief held by some brewers that they injure the flavour and other qualities of the beer.

(*g*) The system in use for cleansing the beer may be a necessarily wasteful one, as where the cleansing is performed in unions or puncheons as compared with the system of cleansing in the fermenting tun or settling back.

(*h*) Through robbery, drink being passed out of the gates without being recorded. A thoroughly reliable

gateman is essential, and if there is any serious deficiency the gate arrangements should be inquired into. Sometimes XX is passed out of the gates as X.

It will be evident from this recital that waste is a composite item which must be judged according to the circumstances of each case. In an average English brewery doing a "tied" trade in running beers where a barm press is used and the liquor worked up the waste should be from 4 to 5 per cent. If it is less, or if it appears to be less than 4 per cent. the low apparent percentage will, on enquiry, be probably found to be due to the casks not containing full measure, and an enquiry should be made into this matter. If the liquor from the barm press is not used, the waste, as already mentioned, will be appreciably increased. In average Irish breweries, the loss (exclusive of over measure) will be found to range from $5\frac{1}{4}$-$5\frac{3}{4}$ per cent. on "single" to $6\frac{1}{4}$-$6\frac{3}{4}$ on "double" stout, but if the barm press is not used all the year round (and in one or two of the summer months some Irish brewers do not use it) these percentages would be higher. For the reason already mentioned, loss on racking or over measure is very heavy in Irish breweries, and will on the average, probably range from 2 per cent. to, in some cases, nearly 3 per cent. In looking at the waste shown in an Irish brewery, particular care should be taken to enquire into the method by which the percentage has been arrived at, as in some the hogshead (52 to 54 gallons) is reckoned as $1\frac{1}{2}$ barrels, equal to 48 gallons; in others, Imperial measure is taken (as it ought always to be) and the loss by over measure separately ascertained. In Guinness's the waste is a little under 5 per cent. but this small waste results largely from the gigantic scale on which the brewing operations are carried on. The waste in ale brewing is appreciably greater than in porter brewing, the drink in the former case having to be kept much longer than in the latter.

Another possible source of loss which will not appear on the surface nor perhaps be reflected in the "waste" which appears in the books is the loss which may be sustained by bad brewings which are allowed to run into the sewer. Cases of this kind sometimes happen.

RETURNED BEER.

The percentage which the returned beer bears to the sales should be closely looked at. High returns involve not only a direct diminution of profit, but loss of reputation. Bad brewing, bad materials, unclean casks, or bad water are some of the many causes resulting in high returns. Mr. Howard Tripp, whose opinion is entitled to the greatest respect, mentions 1 per cent as a fair average. In English breweries, the bulk of the trade of which is with tied or managed houses, this rate will on the average be found to hold good, in many cases the actual rate will be found to be less. In Irish breweries (the trade of which is wholly or almost wholly free) two per cent would be regarded as moderate. All other circumstances being equal, the returns in an ale brewery would be greater than in a porter brewery, and in a brewery doing a tied trade the returns would be very much less than in a brewery doing a free trade.

BREWING ACCOUNT.

In the introduction a full explanation of the meaning of the term "extract" was given, and again, when dealing with the cost price of barley, it was pointed out that the cost price alone of barley was not necessarily a criterion of cheapness, as the extract obtained from the barley was the important element in the brewing, and a higher extract might more than compensate for a higher price. It is, therefore, important to ascertain what has been the average extract obtained from pale malt. This, of course, will vary from time to time and even from brewing to brewing, but as to the latter, any violent fluctuation should call for inquiry. Malt made from home-grown barley should yield, say, from 82 to 88; malt from most, but not all, foreign barleys would yield less. In an average English brewery, using fair but not too highly priced barley, the average extract should be about 86, and if anything a little more than less. In computing the extract in a porter brewery the black malt is usually left out of account. Black malt does yield a certain amount of extract, but some good authorities assert that they can never trace its effect—that is to say, if they mash 500 barrels of pale malt in one brewing, and if at another brewing they mash for porter

500 barrels of pale and 25 barrels of black they cannot trace that they get any more extract—other things being equal—out of the 525 than they did out of the 500. As it gives very little extract, no more is used than is requisite to give the needful colour and flavour to the drink; about 5 to 6 per cent. is the usual proportion. To test the average extract for the whole year as shown by the Brewer's Book, the total quantity in gallons or barrels of drink produced should be compared with the quantity of malt and malt substitutes used. If a large hogshead trade were done it would, in Irish breweries, be necessary to take the quantity of drink in gallons in order to arrive at an accurate result.

In breweries which brew from malt and hops alone, the extract is a reliable index to the quality of the barley and to the conduct of the brewing operations, but if sugar, saccharine or other malt substitute is used, the proportion of the substitutes to the malt used, or the quality of the substitutes, may vary, which makes the extract fluctuate, and consequently, inferences based on it alone would be unreliable.

Take, for example, three brewings in which 112 quarters of malt, or the equivalents of 112 quarters of malt, are mashed, producing in each case 440 barrels of beer at a specific gravity of 60, or otherwise 21·6 lbs. beer.

1. Where no malt substitute is used—

   Extract $\frac{440 \times 21{\cdot}6}{112}$ equals 84·8

2. Where 96 qrs. of malt and 32 cwt. of pure cane sugar (the equivalent of 16 qrs. of malt) are used.

Extract	equals	
440 barrels × 21·6	,,	9504 lbs.
Deduct standard extract from 32 cwt. sugar—64 barrels 20 lbs. beer ...	,,	1280 ,,
Assumed extract from 96 qrs. Malt ...	,,	8224 ,
Average extract per qr.		85·6

3. Where 102 quarters of malt and 20 cwt. of pure cane sugar (the equivalent of 10 quarters of malt) are used

Extract	equals	
440 barrels x 21·6	,,	9.504 lbs.
Deduct standard extract from 20 cwt. sugar—40 barrels, 20 lbs. beer	,,	800 ,,
Assumed extract from 102 qrs. Malt... ...	,,	8,704 ,,
Average extract per qr.	,,	85·3

In these examples it will be observed that the standard extract supposed to be obtained from the malt substitute is deducted from the total extract, and this is the cause of the fluctuation in the extract apparently obtained from the malt. The fluctuation will be in proportion to the extract obtained from the malt substitute *over* or *under* the standard extract which is employed in the calculation.

When malt substitutes are used, therefore, the extract alone is not a sufficient evidence of the quality of the barley and of the efficiency of the brewing operations. In such cases, the actual cost of production per "Brewers' pound" should be worked out as before explained. The cost per lb. will, of course, vary, but not nearly to the extent of the fluctuations in the price of barley. In the average English brewery the cost should be about 4½d. per lb. Some breweries which have a particularly good demand for grains show a lower figure, and others may use a very large proportion of very cheap sugar which may bring down the cost. In Ireland, the cost per lb. will on the average be found to be higher than in England, owing probably to the almost exclusive use in Irish breweries of malt. The cost per lb. should always, in the case of breweries which make their own malt, be arrived at on the basis of the brewery being charged with the malt at fair average selling prices, and not at cost.

HOPS.

The consumption of hops is an important item. For Stock or Pale Ales, 10 lbs. to 12 lbs. may be used per quarter of malt mashed, for 18 lbs. running beer about 5½ lbs., for 21 lbs. beer 6 lbs., for single porter 8 lbs. to 9 lbs. in winter, and from 9 lbs. to 10 lbs. in summer, for stout about 11 lbs. in winter and about 13 lbs. in summer. Of course if very old hops are being used, a larger quantity will be required than will be necessary if the hops are new. For ale brewing there will be, in addition to the hops boiled, a small quantity used for dry hopping. The amount so used will vary according to the class of ale, from 2 or 3 ounces in small country breweries to 1 lb. per barrel in large breweries brewing fine pale ales. The hops used for dry hopping are generally of extra quality. It should be seen that the weight of hops used is reconciled with the purchases and the stocks. In many English country breweries, dry hopping is being discontinued, either wholly or to a very great extent.

BEER DUTY.

The total quantity on which duty has been charged should be compared with the total drink collected. The excise officers' charge should be under the quantity collected, and, as a general rule, if it were not, the brewer might be suspected of not being as vigilant as he might be.

GRAINS.

Speaking generally, the quantity of grains turned out should be greater than the quantity of malt mashed—that is to say, one quarter of malt should yield 9 to 10 bushels of grains; 9½ bushels would be a very fair out-turn. In many breweries, owing to careless measurement, this is not so. Fraud occasionally takes place in the grain sales. In Ireland, the out-turn of grains is sometimes greater than the above figures, occasionally reaching as high as 1½ barrels of grains for each barrel of malt mashed. In England the price is on the average from 3d. to a little more than 3d. per bushel. In Ireland the average prices range from 8d. to 1s. and 1s. 3d. per barrel. In testing the proceeds of grains in an English

brewery, allowance from average prices must be made for porter grains as mentioned in an earlier chapter.

BREWERY WAGES.

The circumstances of breweries differ so greatly that no safe general basis can be laid down for testing whether the wages bill is excessive or not. The most remarkable contrasts are met with in practice, so remarkable indeed that when the fullest weight is given to the differences in circumstances, the disparity between the figures can scarcely be accounted for. For example, the following is in effect a synopsis of the average weekly brewery pay sheet of a country brewery doing a little over 40,000 barrels a year:—

	£	s.	d.
3 Cellarmen (22s., 20s., 18s.)	3	0	0
1 Racker	1	3	0
1 Night Watchman	1	0	0
2 Coopers	3	10	0
1 Engine Driver	1	6	0
1 Fireman	1	0	0
4 Upstairs Men	4	10	0
1 Under-Brewer	2	10	0
2 Cask-Washers	1	19	0
1 Man at Depôt	1	5	0
17 Men at a total weekly cost of ...	£21	3	0

The following is a synopsis of the weekly brewery pay sheet of another brewery doing not quite 40,coo barrels a year:—

	£	s.	d.
5 Cellarmen	5	16	0
1 Racker	1	7	0
1 Night Watchman...	1	5	0
2 Working Coopers	3	2	0
1 Foreman Cooper	2	8	0
1 Engine Driver	1	6	0
1 Man to look after Malt Cleaning Machine	1	7	0
5 Upstairs Men	5	1	0
2 Foremen Brewers	4	0	0
1 Under Brewer	2	0	0
4 Cask Washers	4	5	0
24 Men at a total weekly cost of ...	£31	17	0

The third set of figures relates to a brewery doing about as much trade as the other two put together, namely about 75,000 barrels a year :—

	£	s.	d.
7 Vat House Men	6	18	0
25 Upstairs Men	27	11	0
12 Cask Washers and Yard Men	11	10	0
3 Grainsmen...	3	7	6
1 Foreman Engineer	3	2	6
48 Men at a total weekly cost of ...	£52	9	0

The fourth set relates to a brewery doing about 85,000 to 90,000 barrels a year :—

	£	s.	d.
19 Racking Shed and Cellarmen	17	11	0
6 Firemen, Boilers and Coppers	6	10	0
35 Brewhouse Men	31	10	0
12 Malt Store, Mill, and re-drying ...	12	10	0
24 Cask Washers and Yardmen	21	7	6
1 Grainsman	0	19	6
97 Men at a total weekly cost of ...	£90	8	0

Coopers have been excluded from the last two lists but the number of men employed and the weekly expenditure under this head are in one case about four times and in the other apparently six times what they are in the lowest of the other two wages bills. Draymen, stablemen and tradesmen have also been excluded as the expenditure under the last three heads is governed by the circumstance whether the beer is mostly carted by the brewery's own drays or sent by rail, and whether it is the custom for the brewery to execute repairs by its own tradesmen or get the repairs done by outside people. The first two of the four sets of figures given above are comparable and also the last two. In the case of the first two, both breweries are modern, compactly built, do almost exclusively a tied trade, and are otherwise (with one important difference to be mentioned) similarly circumstanced. The one difference is that the first of the two is managed with consummate ability by a man who understands his business thoroughly, the other in

this respect has not been so happily situated. The last two breweries differ widely in their circumstances from the first two, but *inter se* they are strictly comparable. They are both old, can hardly be called compact, and do an almost exclusively free trade. Two remarks however may be made here as applicable not only to the particular figures under review, but to nearly all similar comparisons, namely, that it is extremely difficult, except in the simplest matters, to institute really exact comparisons between one brewery and another, as in very few cases will the expenditure be found classified under identical heads, and secondly, it very frequently happens that workmen are not solely employed on the work which their designation in the wages book indicates, but divide their time. These remarks apply especially to comparisons made as to the cost of malting in a malting business pure and simple with the cost of making malt in a malt house belonging and contiguous to a brewery. The cost in the latter cases, will, other circumstances being similar, be usually found to be less than in the former case, due probably to the fact that a good deal of odd labour, and various expenses are provided or borne by the brewery. Similarly, although the synopsis of wages in both of the last two cases has been carefully made, other comparisons between the two concerns in question seem to point to the probability that some of the labour described as "brewery" in the last case is employed really in or about cooperage work, as the average cost of the cooperage in the last case (after taking into account the difference in the trade) is only about $\frac{2}{3}$rds of what it is in the other case. But even with this adjustment the labour bill in the last case is out of all proportion to what it ought to be, compared with the other concern, which itself in turn is also excessive.

DRAYMEN'S WAGES.

If it is difficult to give any safe guide to what the brewery wages ought to be, it is obviously impossible to give any guide whatever in regard to draymen's wages. One concern may deliver from one-third to two-thirds of its drink by rail and a very small balance by its own drays; another concern may

deliver four-fifths, and, in some cases, practically all, its drink by its own drays. Although no guide can therefore be given as to the reasonableness of the expense under this head, a little enquiry into the method of delivering the beer may sometimes be useful. Where drink is mostly delivered by drays to tied and managed houses, and nine-tenths of the trade in England is with tied and managed houses, the districts should be mapped out into separate "rounds," and all tenants and managers should be made to understand that on a particular day or on particular days in the week, they are to take in all the beer they require for the week, and that in the absence of any special reason they will not be supplied twice in the same week. In this way the deliveries can be systematised, the journeys made by the drays do not overlap, and there is an appreciable saving in horseflesh and draymen's wages. Even where the trade is not tied, this system may be, and in fact has been, successfully carried out and has resulted in great saving.

OFFICE WAGES.

Where the trade is wholly with tied and managed houses, the book-keeping and clerical labour involved is only one-half, or even less, than is the case where the trade is "free." Four, or at the most five, clerks are, in the one case, able to overtake the work, which in the other case would take ten or a dozen. The deliveries and the collections in the one case can be systematised and arranged to regularly take place on given days of the week, and as to collections, the travellers' or inspectors' returns can be printed in a form so that the names of the tenants of tied houses and the managers of managed houses will recur week after week in the same order. The accounts in the tied and managed house ledgers will follow in the same order, the postings can be made direct from the travellers or inspectors sheets, and the totals of the sheets only dealt with in the Cash Book. The enormous amount of work involved in taking the cask numbers, writing up the cask registers and writing off in the register the empties as they are returned, is, in practice, frequently dispensed with in tied and managed trade. In many other directions

the office work, where the trade is wholly or practically tied or managed, can be cut down 50 per cent. or more as compared with the work involved in a concern where the trade is practically "free."

MEN'S ALLOWANCE BEER OR YARD TAP.

The charge under this head should be investigated. The total quantity of drink used should be compared with the total number of hands in the brewery and the average weekly consumption per head ascertained. Two pints per day is the rule in many English breweries, but three pints a day are frequently allowed, but the allowance should not exceed three pints, except as to a few men such as the stoker, or men working in malt lifts and bins. In addition to the consumption of the brewery hands, allowance must also be made for beer given to outside carters, tradesmen, &c., whose business brings them into the brewery, but even when ample allowance has been made under this head, great extravagance or waste is sometimes observed.

In Irish Breweries the ordinary allowance is two pints per man per day, with the exceptions, as above mentioned, of the men working on the malt lifts who may get three or four pints each per day. In some cases the men in Irish breweries are given the option of taking 2d. per day in lieu of their beer allowance.

AVERAGE SALES PER HOUSE.

In investigating and reporting upon the accounts of breweries which, judged by the total sales, have not made as much profit as other similar concerns of about the same size, it is important in all cases, and most especially where there are a number of managed houses, to ascertain the average sales per house. If for example, the managed houses of one brewery sell on the average, say, £900 worth of beer per annum and the managed houses of another, say, £300, then all other things being equal, the net profits of the first-named will be enormously greater than the other. Where one brewery, to effect sales of £900, pays one manager, one set of servants, one set of rates and taxes, the other has practically to pay

three managers, three sets of servants, three sets of rates and taxes, in fact is under triplicate expenses all round to effect sales of a similar amount. Even where the houses are let the bearing on the net profits of the average sales per house is most important. In one case practically three times the clerical labour, great additional delivery expenses, and other additional burdens, have to be carried as compared with the other case.

FREE AND CANTEEN TRADE.

Wherever "free" or canteen business is carried on by a brewery the bulk of the trade of which is with tied or managed houses, the questions whether "free" and canteen business is really profitable does not as a rule appear from the accounts, but should be always enquired into. In many cases it will be found that when the special expenses of travellers, the additional expense of delivery, heavy discounts and allowances, bad debts, subscriptions, increased wear and tear and loss of casks, increased returns, and other items are taken into account, the trade is done either at no profit or at a loss.

SUBSCRIPTIONS AND DONATIONS.

These charges very often amount to more than they should do. In cases where the trade is practically tied the necessity for expenditure of this kind, except to a very limited extent, is not obvious. The same remarks apply to Christmas boxes.

COOPERAGE.

An investigation into the cost of cooperage is in most cases one likely to repay the time spent upon it. As a general rule, the larger the brewery, the lighter is the average cost *per cask*, or, proportionately to the size of the business, *per annum*. In one of the large London breweries doing a trade of over 400,000 barrels a year, the annual charge for repairs averages from 3½d. to 4½d. on the entire stock of casks carried. In Guinness's, as already mentioned, the average cost of repairs is about 5¾d. on the entire stock. The figures of large concerns such as the two mentioned are however inapplicable

to medium sized breweries, where, as a rule, the average cost, even where every economy is exercised, will be found to be considerably higher, probably double, and in some cases three times the above averages. If proper records are kept it is advisable to see what proportion the number of casks repaired each year bears to the total cask stock carried. In very large concerns, of which one instance has been mentioned in a previous chapter, casks are on the average repaired once in every two years, and even in moderately sized concerns, this average will frequently be found to obtain. If the proportion of repairs to the total stock exceeds this limit, the cause should, if possible, be traced. A brewery for example, which delivers the bulk, or a great proportion of its drink, by its own drays should have very much fewer repairs than a brewery, a large part of the drink of which is transported by rail, ocean or canal. In all well regulated concerns, the draymen are bound, under penalty of a fine, to take with them a sack filled with old corks, or some similar contrivance, to be placed at the bottom of the gantry, when unloading, so as to prevent the damage which might otherwise be caused by the casks coming in violent and direct contact with the road or pavement. A brewery doing free trade will almost certainly have a much larger proportion of repairs than one doing a tied trade. In two concerns where the trade is practically free and each of which does about 80,000 barrels a year the writer has found that in one case the coopers' wages for repairs, re-made casks, &c., (in fact the entire coopers' wages for all except new work) amount on the average to 2/5 per cask per annum on the stock carried; in the other case to a little over 1/6 per cask. Both concerns pay, or are supposed to pay, on the same schedule of time and piece work, the circumstances of the trade of both are nearly identical and both are situated within three miles of each other. Neither case can in this matter be taken as a model for other breweries, but the wide variation in the figures is very striking and taking the circumstances into account, hardly credible.

Working coopers are sometimes engaged at a fixed rate per day or week, sometimes by piece work, and sometimes

where several are employed, it is the custom to put the individual cooper alternately on time and piece work. For day work 5/6 is the usual rate.

The following are the rates for repairing beer casks laid down by the Burton-on-Trent Journeymen Coopers' Union, and these rates with slight modifications prevail in a good many English breweries:—

Butts	1/0¾
Hogsheads	0/9¾
Barrels and ½-Hogsheads	0/7¼
Kilderkins	0/6
12-Gallons and under	0/6

Four staves, or three staves and one head to constitute the limit; all over to be done by day work.

Casks repaired in both heads and staved to be done by day work.

Reversing the ends of repaired casks;—Butts, 6d., all sizes under, 4d. extra.

Repairing returned export casks, joints taken down, outside and heads shaved, 2d. per cask extra.

Regular day work, 5/9 per day, 54 hours to constitute a week.

The following prices for repairs are in operation in Dublin:—

Hogsheads	–/11
Barrels..	–/9
½-Barrels	–/7
¼-Barrels	–/6
Time, per day..	5/6
NEW—	
Hogsheads	3/–
Barrels	2/4
½-Barrels	1/11
¼-Barrels	1/6

In some cases, especially in concerns situated in small towns or in remote country districts, special schedules of pay bearing no relation to the two just given may be found in force, and the most striking contrasts may be met with in such concerns situated within a few miles from each other. The following for example are the respective rates paid for repairs in two breweries, very similarly circumstanced, situated within 40 miles of each other and each doing about 40,000 barrels a year.

	In one case.	In the other case.
Hogsheads	11d.	4d. per cask
Barrels	9d.	all round
Half-barrels	7d.	irrespective
Quarter-casks	6d.	of size.
Coopers' wages per day	5/6	4/6

Apart from rates, average costs, etc., the cooperage wages list ought to be compared with the barrelage of the brewery. An English country brewery doing a tied trade of, say, 40,000 barrels a year ought to give employment at the outside to 3 coopers, at an average weekly cost in wages of £5 5s. od. to £5 10s. od.

HORSE FEEDING.

Great waste is frequently observable in this item. No rule can be laid down, as the price of fodder varies from year to year. If 14s. per horse per week is exceeded in an average concern, inquiry should be made. The cost, if anything, should be rather under than over that figure.

BAD DEBTS.

From one to one and-a half per cent should on the average and taking one year with another cover bad debts on "free" trade; on "tied" trade the percentage should be much smaller.

AGENCIES.

In many breweries the terms and conditions of agencies vary exceedingly, and are as numerous as the agencies themselves. In old-established concerns anomalies are especially found. In some cases the agent is allowed a single commission to cover cartage, discount to customers, and all other expenses; in others, the brewery sends its own horses and drays and pays draymen's wages; in others, the agent is paid a salary, all discount and expenses being borne by the brewery; in others he is remunerated on a sliding scale, say, 2½ per cent. on sales up to £12,000 a year, and 5 per cent. on all sales over that amount. A good many anomalies cannot

be altered, or at least not at once; and it not infrequently happens that they have existed so long that the effect on the profits of the agents' terms is never really ascertained, and it is occasionally desirable for the accountants to enquire into and report upon these matters.

CONCLUDING REMARKS.

In the foregoing pages, and in the forms which are appended, the principal books necessary to record the operations of a brewery have been described, but there are, in addition, many useful though subsidiary books which are found in all breweries. For example, there might be a schedule of the rents payable on the brewery—a most important matter when there may be 20 or 30 head rents payable in respect of different "takes"; a schedule of the insurances on the buildings and contents, and of the tied houses, showing the names of the companies with which insured, the amount insured, the portion of the building and stock on which the insurance is effected, and the rate per cent. The brewer or store clerk, in many cases, keeps books himself, independent of the gate books, recording the goods received, and as he receives and initials invoices, writes off the entries in his books, so as to prevent an invoice being passed twice. There are very often blending dockets issued by the brewer to his assistants, giving them the proportions of the different blends to be made. The draymen sometimes, especially with country brewers, carry cash and order books; and, in fact, there are a host of minor books and matters, useful or essential, in a properly organised brewery to fully describe which would expand these pages to an extent which would exceed the limit the writer intends to observe.

In the same way, the remarks under the head of "Investigations" must not be taken as covering the entire ground. The matters where as a rule waste, inefficiency and excessive expenditure may be found, have been discussed but in many other directions, varying according to the circumstances of each case, the investigating accountant may find enquiry useful.

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Form 1.—EXCISE BREWING BOOK.

Date of Entry	Date and hour of: Mashing Malt and Unmalted Corn, Rice, Flaked Maize, &c.	Date and hour of: Dissolving Sugar.	Quantity to be used of: Malt. Q	Malt. B	Malt. G	Unmalted Corn. Maize. Q	Unmalted Corn. Maize. B	Unmalted Corn. Maize. G	Unmalted Corn. Other Grain. Q	Unmalted Corn. Other Grain. B	Unmalted Corn. Other Grain. G	Rice, Rice Grits and Flaked Rice. lbs.	Maize, Maize Grits, Flake Maize, &c. lbs.	Sugar. lbs.	Syrup. 14 lbs. to the gallon lbs.	Syrup. 13 lbs. 2 oz. to the gallon lbs.	Glucose or Saccharum lbs.	Date and hour when all the Worts will be drained from the Grains.	Entry of Worts Collected. Date and hour when collected	Vessels. No.	Vessels. Name.	Dry Dip.	Gravity.	Mixing. Notice to mix Worts. Date and hour of mixing	Dates of Brewing	Vessels from which taken. No.	Vessels from which taken. Name.	Worts Mixed. Vessels from which taken. No.	Worts Mixed. Vessels from which taken. Name.	Worts Mixed. Dry Dip.	Worts Mixed. Gravity.

Form 2.—BREWERS SURVEY BOOK.—(*Concluded on next page*).

Date and hour of Survey, 190 .	Particulars in Brewers' Entry Book.																							
	Date and hour of		Quantity to be used of																		Time when Worts will be drawn off Grains in Mash Tun.	Entry of Worts collected.		
	Mashing Malt, Unmalted Corn, Rice, Flaked Maize, etc.	Dissolving Sugar.	Malt.			Unmalted Corn.						Rice, Rice Grits and Flaked Rice.	Maize Grits, Flaked Maize, and other similar Preparations	Sugar.	Syrup.		Glucose or Saccharum				Date and Hour when Collected.	Vessels.	
						Maize.			Other Grain.						14 lbs. per gallon	13 lbs. 2 ozs. per gallon						No.	Name.
			Qrs.	B	G	Qrs.	B	G	Qrs.	B	G	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.							

FORM 2.—(*Concluded*). BREWERS SURVEY BOOK.

| CONDITION OF THE | | |

Form 3.—ABSTRACT BREWING BOOK.

PRIMING.

GYLE No. 2. DATE, Jan. 3rd, 1898. STARTED, 6 a.m. FINAL GVTY. 4 9 F.V. GALLS, 5940
X X FINISHED, 6 p.m. RACKG. GVTY. 4·6 CASK GALLS. 5796
17—18 GRAVITY, 17·6 lbs. BRLS. BRWD., 165. F.V. DIP, 37·2, 36·2 WASTE, 144
LAB. EXTRACT....
TOTAL EXTRACT, 2,904 lbs. EXTRACT PER QR., 87·3 COST PRICE PER BRL., 13/2¾.

MATERIALS.	@	£	s.	d.	£	s.	d.	REMARKS.
MALT—								YEAST, 320 lbs., ex 52 very fair yeast.
20 English .. } .. 5 Foreign .. }	35/-	43	15	0	43	15	0	FORCING TRAY.
SUGAR—								
20 Garton Hill ..	9/9	9	15	0	9	15	0	
HOPS—								
119 Levett '95 ..	42/-	2	4	7				RUN DOWN, Jan. 10th. 4 a.m.
56 Cooke '96 ..	55/-	1	7	6	3	12	1	Racking commenced 7 a.m.
175								
RACKING								
DUTY		45	13	8				
WAGES PER QR. ..	3/3	4	1	3	49	14	11	
SUNDRIES—	2/-	2	10	0	2	10	0	
					109	7	0	BRLS. RACKED AS 161
GRAINS & YEAST..	2/3	2	16	3	2	16	3	
					106	10	9	

Form 4.—ABSTRACT BREWING BOOK.

Date.		Remarks.	Malt.	Sugar.	Hops. C.	Hops. Q.	Hops. lbs.	Price.	Amount. £	Amount. s.	Amount. d	Total. £	Total. s.	Total. d.	Date Racked.		Gyle.	No. of Barrels Brewed.	No. of Barrels Racked.	Quality.	Gravity.	Price.	Amount. £	Amount. s.	Amount. d.	Total. £	Total. s.	Total. d.	Remarks.
1898		Brought forward	390·2	1119			5214					1364	18	0	1898			4145	4047½							7051	8	6	
Sept.	30	Qrs. English Malt	6					40/-	12	0	0																	
	,,	,, Foreign ,,	3					32/-	4	16	0				Oct.	7	296	91½	89	×	19·0	36/-	160	4	0	160	4	0	
	,,	Cwts. Glucose		26				8/5	10	18	10																	
	,,	,, Syrup		2				9/-		18	0																	
	,,	Lbs. Californian					22	4½d.		8	3																	
	,,	,, Boultons					25	10d.	1	0	10																	
	,,	,, Beales					5	1/-		5	0																	
	,,	,, Mainwarings					5	1/4		6	8																	
	,,	,, Old Hops					66	3d.		16	6																	
	,,	,, Sundries								15	0																	
												32	5	1														
			399·2	1147			5337					1397	3	1				4236½	4136½							7211	12	6	
		Duty for Month										1203	15	5				Grains for Month								46	10	2	
												2600	18	6												7258	2	8	
																		Cost								2600	18	6	
																		Gross Profit								4657	4	2	
																		Number of Barrels Prewed ..				4236½						
																		,, ,, Racked ..				4136½						
																		Deficit				100						
																		Percentage 2·3										

Form 7.—BLENDING OR RACKING BOOK.

Date.	Number of Brewing or Gyle.	Description of Drink.	Imperial Barrels started	Quantity Blended.									Total blended in Imperial Barrels.	Total racked in Imperial Barrels.	Particulars of Racking.						Loss.		Remarks.
				Vatt'd Drink	Finings	Worts	Old	Barm Press.	Ullages.			Total.			Hhds.	Brls.	Half Brls.	Quarter Brls.	Pins	Vatt'd	Brls.	Per Centage.	
1898. Jan. 6	1	X	100		½	8	3½	5	2			19	119	114	10	29	120	24	32		5	4·4	

Form 6.—ABSTRACT BREWING BOOK.

Date.	No. of Brewing or Gyle.	Materials Used.					Barrels of Drink Collected.			Gravity of Drink.	Worts Taken off.		Extract per quarter Pale Malt	No. of Standard Gallons charged with Duty.	Barrels of Drink to Blending Room.			From Barm Press.	Waste from Fermentation.	
		Pale Malt Qrs.	Black Malt Qrs.	Saccharine or other Materials	Hops. lbs.	Description and Cost price of Hops.	X	XX	E. I. A.		Brls.	Gravity.			X	XX	E. I. A		Brls.	Per Centage.

Form 7.—BLENDING OR RACKING BOOK.

Date.	Number of Brewing or Gyle.	Description of Drink.	Imperial Barrels started	Quantity Blended.									Total blended in Imperial Barrels.	Total racked in Imperial Barrels.	Particulars of Racking.						Loss.		Remarks.
				Vatt'd Drink	Finings	Worts	Old	Barm Press.	Ullages.			Total.			Hhds.	Brls.	Half Brls.	Quarter Brls.	Pins	Vatt'd	Brls.	Per Centage.	
1898. Jan. 6	1	X	100		½	8	3½	5	2			19	119	114	10	29	120	24	32		5	4·4	

Form 8.—STORE BOOK OR VAT HOUSE BOOK.

Date	Drink Delivered out of Store.																				Equivalent in Brls.	Drink in Store.																				Equivalent in Brls.	Total in Barrels deliver'd and in Stock.
	XX				X				P.A.				T.B.									XX				X				P.A.				T.B.									
	Hhds.	Brls.	Hlfs	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.		Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.	Hhds.	Brls.	Hlfs.	Qrs.		
1898 Jan 1																						Stock																					
2	1		3			6	2			8	6	4		6	3						29½	3	24	6			18	3			7	10	6		8	4						74½	
4	2	24				12				10					1						49½																					
5		16	3			10	4			14	2			8	3						54																					
31																						Stock																					
																						2	28	4			26	6			16	6	8		6	8						93	
	12	160	24			112	18			128	16	12		56	28						517	Delivered..																				517	
																						Racked as per Racking Book .. .																				535½	
																																										610	610

Form 9.—ORDER BOOK.

Origin of Order.	NAME.	ADDRESS.	Ale.	E I. Ale.	XX Stout.	X Stout.	REMARKS. To what Station to be sent—Condition of Drink, &c., &c.

Form 10.—SALES BOOK.

Dates.	Fo.	NAME.	ADDRESS.	Dray-book.		Brewing No.	Drayman.	Ckgs. Rt.	M.A.	E.I.A.	D.S.	S.S.	T.B.	Amount.			Extra.			Less.			Observations.
			Forward					1172½	117¼	127¼	50¼	822	17¾	1697	13	0	4	10	0	1	10	0	
Aug. 31	347	Philip Johnson,	Union St.	86	134	157-22	Reilly.	6				3	1	5	1	6					4	6	
,,	810	W. J. Bolger,	Capel St.		5			½															
,,	678	Patk. Dunville,	Ballsbridge,		6	157		1½				2		2	13	0					3	0	
,,	520	Dr. Gordon,	Bray Square,		7			¼		¼					8	6		1	0				
,,	714	Edwd. Thomas,	Mid. Abbey St.		8	158		3				2		2	13	0					3	0	
,,	738	Jas. Leland,	Pembroke Av.		9			¼															
								1249	119¾	128¾	£0¼	836	18¾	1725	3	0	8	16	0	2	15	6	
		From Liverpool Sales Book					..	1019¼	38¼	172¾	23¼	676½	51¼	1490	1	0	14	15	6	3	0	0	
		,, Newcastle ,,					..	555¼		31⅓	9¼	490½	37⅛	766	14	0	31	5	9	3	9	3	
		,, Birmingham ,,					..	428¾	36½	56½	60¾	392⅛	8⅛	756	19	6	9	11	0	1	10	0	
								3252½	194½	361½	143½	2395½	116	4738	17	6	64	8	3	10	14	9	

RECAPITULATION.

194½	Bls.	Ale	@ 40/-	£389 0 0
361½	,,	E.I.A.	,, 30/-	542 5 0
143½	,,	D.S.	,, 38/-	272 13 0
2395½	,,	S.S.	,, 28/-	3353 14 0
116	,,	T.B.	,, 22/-	127 12 0
			Extras £64 8 3	
			Less 10 14 9	
				53 13 6
3211	Brls.			£4,738 17 6

Form 11.—SALES BOOK.

Drayman, &c.	NAME.	ADDRESS.	H.	B.	H.B.	Q.	P.	Amount.		
		Forward	8	3	100	20	3	103	0	0
Reilly.	John Robinson,	Capel Street,		10				21	0	0
,,	P. White,	Thomas Street,			15			10	0	0
	&c.	&c.								
	&c.	&c								
			12	17	162	39	8	169	4	7

SUMMARY.

12	42/	£25 4 0
17	26/6	22 10 6
162	13/4	108 0 0
39	6/8	13 0 0
8	3/9	1 10 0
		170 4 6
	Under	0 19 11
		£169 4 7

Form 12.—SALES BOOK.

Date.	Name, &c.	Dray Book.	Quality.	Casks.						Ledger Folio.	Amount.	Extra.	Less.	X		XX.		&c.	
				H	B	H B	Q	P						Brls.	Amount.	Brls.	Amount.		

Form 13.—SALES BOOK.

Date	Customer's Name.	Address	Forwarding Book Reference.	Dray-man.	Particulars.	Number of Gallons.					Ledger Folio.	Amount.	Extra.	Less.	Mem'r'nda	Tied Customers' Ledger.	Free Customers' Ledger.	Private Customers' Ledger.
						XXX	XX	X	Bitter.									

Form No. 14.—SALES BOOK.

Date.	Folio.	Name.	Address.	Particulars.	Price.	Total Brls.	Amo'nt	Ales.						Wines and Spirits.			Bushels.	Malt.	Corn.	Cigars.		Particulars.	Folio.	Sundries.
								Brls.	Tied.	Brls.	Free.	Brls.	Private	Tied.	Free.	Private								

Form 15.—SALES BOOK.

X.			XX.			&c.			Doz. Bottled Stout.	Doz. Bottled Beer.	Ledger Folio.	Name	No. of Inv.	Beer, Porter and Stout.			Malt.			Bottled Beer and Stout.			Sundries.			Total.		
Brls	½	¼	Brls	½	¼	Brls	½	¼																			

Form 16.—SUNDRIES SALES BOOK.

No. of Sales Ticket.	Date.	Name.	Address.	Description of Goods.	Price.	Cash Sales.	Credit Sales.		Barm.	Grains	Culms.	Grounds	Spent Hops.	Manure.	Sundries.	
							Amount	Led. Fol.							Led. Fol.	Amount.

Form 17.—MINERAL WATER DEPARTMENT. CASH SALES BOOK.

Date.	Carter No. 1.				Carter No. 2.				Carter No. 3.				Carter No. 4.				Cash Book Folio.	Cash. Daily Total.
	Mineral Waters.	Stone G.B.	Syphons	Cash.	Mineral Waters.	Stone G.B.	Syphons	Cash.	Mineral Waters.	Stone G.B	Syphons	Cash.	Mineral Waters.	Stone G.B.	Syphons	Cash.		

Form 18.—MINERAL WATER DEPARTMENT—CREDIT SALES BOOK.

Date.	Name.	Address.	Carter.	Mineral Waters.	Stone G.B.	Syphons.	Ledger Folio.	Amount.		

Form 19.—CASH RECEIPTS BOOK.

Receipt.		Date.	Folio.	Names.	TOWN.						LIVERPOOL.						NEWCASTLE.						BIRMINGHAM.					
					Cash.			Discount.			Cash.			Discount.			Cash.			Discount.			Cash.			Discount.		
				To Amount Forward	1,111	10	4	58	14	7	2,094	5	1	79	1	0	631	12	1	39	14	3	770	18	0	53	13	6
22	31	31	515	Mrs. Dunn							7	2	6		7	6												
	2	,,	100	James Deane							9	16	8		10	4												
	3	,,	714	Edward Collins							10	0	0															
39	73	,,	223	Anne Buckley	2	0	0	1	3	0																		
					1,248	12	10	85	19	10	2,305	3	4	114	11	2	669	5	7	41	19	3	810	10	4	59	19	6

SUMMARY.

	Cash.	Discount.
Ledger F	£1,248 12 10	£85 19 10
,, G	2,305 3 4	114 11 2
,, K	669 5 7	41 19 3
,, L	810 10 4	59 19 6
	£5,033 12 1	£302 9 9

Form 20.—PETTY CASH PAYMENTS.

		Amount.			Totals.			Charges.			Freights.			Sales Expenses.			Repairs and Renewals.			Office Expenses.			Sundries.			
																							Account.	Amount.		
	Forward				108	7	3	10	19	6	13	11	3	14	5	7	36	12	9	18	7	8		14	10	6
1898 Aug. 31	R. Deane, Cash Short 23rd Jan. '98	1	2	5																						
	Branagan Rail Fares	0	8	8																						
					1	11	1	1	11	1																
	Patrick Connolly, Cartage to 27th Aug.	2	2	0																						
	Railway Charges 1/9, 8d.	0	2	5																						
					2	4	5				2	4														
	Expenses, per Vouchers, 10/- and 2/- &c.	0	12	0	0	12	0							0	12	0										
					112	14	9	12	10	7	15	15	8	14	17	7	36	12	9	18	7	8		14	10	6
																							Gratuities	2	5	0
																							Harness Repairs..	4	3	6
																							Shoeing ..	3	10	0
																							Corks ..	4	12	0

Form 21.—GENERAL CASH BOOK

RECEIPTS.

Receipt	Date.	Folio		£ s. d.	£ s. d.
1898.			To Amount Forward		3368 15 11
39–91	31	128	„ Jno. J. Curran		10 0 0
		243	„ Rents, per Jas. Clarke		15 10 9
		182	„ Grains this Month, 2,202 brls. at 11½d.		105 9 9
		147	„ Charges, Petty Cash, Packs, &c...		0 5 4
		211	„ Malt „ 1 bl., 8 st...		1 16 8
		190	„ Hops „ 1 lb. ..		0 1 6
		105	„ Bills Receivable, No. 480, due 3rd Sept., 1898—Composition ..		0 4 7
		111	„ Beer Receipts this Month,		
			Ledger J	1248 12 10	
			„ G	2305 3 4	
			„ K	669 5 7	
			„ L	810 10 4	
					5033 12 1
					£8535 16 7
			Dr. CASH.		
			Amount of this side	8535 16 7	
			Deduct Balance from last Month ..	250 5 5	
		138	Net Receipts	£8285 11 2	

PAYMENTS.

	Folio.		£ s. d.	£ s. d.
1898.		By Amount Forward		7545 0 0
Aug. 31	252	„ Repairs and Renewals per Dublin Saw Mills Co., to 27th Aug. .		9 10 0
	8	„ Bank of Ireland		30 6 2
	8	„ „ „		77 0 0
	127	„ Barm—Rly. Carriage on Yeast .		1 2 0
	8	„ Bank of Ireland		87 0 0
	284	„ Men's Wages—Coopers .. .	20 12 1	
		„ „ „ Brewery .. .	86 15 4	
		„ „ „ Tradesmen	28 14 1	
		„ „ „ Delivery	60 11 5	
		„ „ „ Malt .. .	33 2 9	229 15 8
	236	„ Pensioners, per Wages Book ..		6 10 0
	261	„ Salaries, per Petty Cash .. .		108 17 8
	147	„ Charges „ Light and Sundries	2 14 3 / 9 16 4	12 10 7
	176	„ Freights „ .. .		15 18 4
	264	„ Sales Expenses „ .. .		15 7 7
	252	„ Repairs „ .. .		36 12 9
	267	„ Office Expenses		18 17 2
	258	„ Sundry Brewing Materials, per R. R. Hill		0 10 0
	111	„ Beer Payments this Month, Legr. J	32 1 10	
	111	„ „ „ „ G	0 13 6	32 15 4
	111	„ Balance to Next Month .. .		308 3 4
				£8535 16 7
		CONTRA. Cr.		
		Amount of this side	8535 16 7	
		Deduct Balance to next Month ..	308 3 4	
	138	Net Payments	£8227 13 3	

Form 22.—TRAVELLERS CASH BOOK.

No. of Receipt.	Date.	Name.	Address.	Date of Invoices Received.	Ledger Folio	Total Amount to be Credited	Tied Customers Ledger.	Free Customers Ledger.	Private Customers Ledger.	Rents, Loans, Nominal and Private Ledgers.	Credit Notes allowed for Returns, Leakages, &c.			Cash Allowance.	Discounts Allowed.	Net Cash Received.	Cash paid in and Expenses.		
											No. of Credit Note.	Credit Book Folio.	Amount.				Due	Particulars.	Amount.

CASH SHEET.

Form 23.—TRAVELLERS COLLECTION SHEET.

BREWERY.

M..... ..... *189*....

No. of Receipt.	Name and Address.	Net Total.	Tied.	Free.	Private.	Discount.	Remarks.

Form 24.—WAGES BOOK.

WORKMEN'S WAGES, AUGUST, 1898.

No. of Men.	WORKMEN'S NAMES.	Week ending 4th August, 1898. Days Worked.	Wages per Day.	Overtime, Stops, &c.	Money Paid. £ s. d.	Week ending 11th August, 1898. Days Worked.	Wages per Day.	Overtime, Stops, &c.	Money Paid. £ s. d.	Week ending 18th August, 1898. Days Worked.	Wages per Day.	Overtime, Stops, &c.	Money Paid. £ s. d.	Week ending 25th August, 1898. Days Worked.	Wages per Day.	Overtime, Stops, &c.	Money Paid. £ s. d.	Total for 4 Weeks
	Forward ..				&c.				&c.				&c.				&c.	&c.
	Tradesmen—																	
	Michl. Smith	4½	4/2		0 18 9	4½	4/2		0 18 9	4½	4/2		0 18 9	4½	4/2		0 18 9	
	J. Whittaker	5½	5/6		1 10 3	5¾	5/6		1 11 7½	5¾	5/6		1 11 7½	4½	5/6		1 4 9	
					7 12 2				7 13 5½				6 17 6				6 10 11	28 14 0½
	Draymen—																	
	H. Burke	6	2/10		0 17 0	6	2/10		0 17 0	6	2/10		0 17 0	6	2/10		0 17 0	
	Draymen's Allowances				7 11 11				2 12 6								9 2 0	
					17 18 11				12 7 6				9 17 0				20 8 0	60 11 5
					61 12 2				56 14 9				53 5 1				64 13 8	236 5 8

SUMMARY, &c.		
Week ending 4th August	..	£61 12 2
11th „	..	56 14 9
18th „	..	53 5 1
25th „	..	64 13 8
		£236 5 8
Coopers ..	..	£20 12 1
Brewery ..	..	86 14 4
Tradesmen	..	28 14 1
Delivery ..	..	60 11 5
Malt ..	..	33 3 9
Pensioners	..	6 10 0
		£236 5 8

M

Form 25.—COOPERS WAGES BOOK.

New		Dressing				Re-made	Enlarged	Repaired	Spares		Time		Sundries		Names	Total Wages
		Staves		Heading												
H. B. ½ ¼	£ s. d.	H. B. ½ ¼		H. B. ½ ¼	£ s d	H. B. ½ ¼	H. B. ½ ¼	H. B. ½ ¼	H. B. ½	£ s. d.		£ s. d.		£ s. d.		

Form 26.—BILLS RECEIVABLE ACCOUNT.

No.	Date drawn.	From whom received.	Where payable.	Date	Term.	Due.	Folio.	Amount.	Discount credited.	Discount debited	Balances on	Date paid.	How paid.	Folio	Amount.	No.

Form 27.—RETURNED BEER BOOK.

Date Returned.	NAME.	ADDRESS.	Size of Cask.	No. of Cask.	Date sent out	Contents Galls.	Brewers' Report.	Gallons Allowed.						Ledger Folio.	Amount.
								M.A.	E.I.A.	D.S.	S.S.	T.B.			
							Ex Gratia :—								
							Gatherings								
							Sour								
							Casky								
							20 % Water								
							&c.								

Form 28.—RETURNED BEER BOOK.

Date returned.	Name.	Address.	Size of Cask.	No. of Cask.	Date sent out.	Contents in gallons.	Why returned or allowed and Brewer's Report.	Gallons allowed.						No. of Credit Note.	Amount of Credit Note.			Date when allowed.	Cash Book Reference.	Amount allowed.			Remarks.
								XXXX	XXX	XX	X	Bitter.											

Form 29.—RETURNS BOOK.

Date.	Ticket No.	Name.	Address.	Particulars.	Price.	Total Gallons.	Amount.	Folio.	ALES.						WINES & SPIRITS					MANAGED HOUSES.			Bushels.			Cigars.	Particulars.	Folio.	Sundries.
									Galls.	Tied.	Galls.	Free.	Galls.	Private.	Galls.	Botts.	Tied.	Free.	Private.	Galls.	Ale.	Spirits.		Malt.	Corn.				

Form 30.—GRAINS BOOK.

DR. GRAINS: OCTOBER, 1898. CONTRA. CR.

1898.		1/6	1/-	-/6	Grain Clerk's Initials.	1/6			1/-			-/6			1898.			Cashier's Initials.	£	s.	d.
Oct.	1	40	20	10	E. L.	3	0	0	1	0		0	5	0	Oct.	19	By Cash ..	R. M. J.	0	15	0
	5	10			E. L.	0	15	0	0	0		0	0	0							
	12		10		E. L.	0	0	0	0	10		0	0	0							
	19			10	E. L.	0	0	0	0	0		0	5	0							
On Hand 19 Oct. 1898.		50	30	20		3	15	0	1	10	0	0	10	0							
		45	25	15		3	7	6	1	5	0	0	7	6							
		5	5	5		0	7	6	0	5	0	0	2	6							
		5				0	5	0													
		5				0	2	6													
		15	Barrels	Sold.	.. £	0	15	0											0	15	0

Form 31.—CUSTOMERS CASK ACCOUNT.

(NAME, ADDRESS, &c., OF CUSTOMER.)

Date.	Folio.	H.	B.	H.B.	Q.	Pins.	Date.	Folio.	H.	B.	H.B.	Q.	Pins.

Form 32.—CASKS IN (OR OUT) SLIP (OR BOOK).

	NAME; RAILWAY STATION OR CARRYING COMPANY, &c., (if known).	BRANDED NUMBERS OF CASKS.				
		H.	B.	H.B.	Q.	

Form 33.—CUSTOMERS CASK ACCOUNT.

HENRY DEANE, TEMPLE STREET, BIRMINGHAM.

Division.	Date out.	Number of Cask.	Date In.	Date Out.	Number of Cask.	Date In.	&c.	&c.
1	7/6/98 ,, 14/6/98 ,, ,,	39,648 19,994 38,421 37,800 39,020	30/6/98 30/6/98 23/7/98	14/6/98 ,, ,, ,, ,,	47,632 46,954 43,301 19,994 17,398	8/8/98 15/8/98		
2								
&c.								
9								

Form 34.—CASK INDEX.

Number of Casks.	Date Out.	Reference to Ledger Account of Customer.	Date In.		&c.			&c.			&c.			&c.		
19990	7/6/98	I. 362/1														
1																
2																
3																
4	14/6/98	T. 362/1	15/8/98	22/8/98	Repaired.	10	25/8/98	B 961/8								
5																
6																
7																
8																
19999																

Form 35.—CUSTOMERS CASK ACCOUNT.

JOHN SMITH,
Liverpool.

Date. Sent Out.	Size.	No. of Cask.	When Returned.	Date Sent Out.	Size.	No. of Cask.	When Returned.	Date Sent Out.	Size.	No. of Cask.	When Returned.
1897. Oct. 16.	Brl.	7105	31/12/97,								
1898. Jan 5.	Brl.	7111									

Form 36.—CASK INDEX.

7105	1/1					7106						7107					
7108						7109						7110					
7111						7112						7113					
7114						7115						7116					

NOTE.—When the Cask 7105 is returned the figures 1/1 will be ruled through.

Form 37.—GARLAND'S PATENT NUMERICAL REGISTER, EDITION B.

Date of Stock Sheet or Invoice.	Brew No. or Private Mark.	Quality.	Size, H., B., K., F. or P.	CASK No.	Date Delivered.	WHERE SENT.		Ledger Folio.	Date of return to Brewery.
						Name.	Address.		
1898.					1898.				
9/3	180	A K	F	6734	15/3	Jones,	Pack Horse,	2/55	17/5/98
9/3	179	L B A	H	67394	25/3	Squires.	Walham Green	4/191	
6/4	191	A A K	P	674950					
6/4	194	A K	B	678					
9/5	230	X X X	H	67981				N.S.	13/5/98
				67					
				67					
				&c.					
				&c.					
				67					

180

6

7

Form 38.—GUINNESS'S CASK OUT (No. 3) SLIP.

G 1 b.

D.S. **S.S.**

Pass No. 374. 86

Name, M. J. Flanagan,

Address, Castlerea.

								Month	Day	
1 — 0 — 0 — 0	1	7	6	3	4	2		M.	18	
D.S.										
1 — 2 — 10 — 2	1	8	9	2	8	6				
S.S.										
	2	3	7	3	2	2				
	2	5	1	2	1	1				
	5	6	0	4	3	9				
	5	6	1	9	8	4				
	5	8	3	2	6	2				
	5	6	0	1	9	1				
Or 560333	5	5	3	3	1	5				
	5	6	0	3	3	5				
	5	9	8	3	7	7				
Referenced by R.C.H.	5	6	1	9	9	5				
	5	1	2	2	4	4				
	5	3	7	4	8	6				
	9	1	7	7	2	1				
	9	3	3	6	8	9				
B 320										
10th Nov., 1898.										

2 H. **2 B.** **10 K.** **2 F.**

Form 39.—GUINNESS'S TRANSPOSITION SHEETS.

10th Nov., 1898, G 307 G.—1 m. 56	(Date in Cypher, M. 10)					
0		B320	191	B320	333	B320
1	984	B320	995	B320		
2						
3						
4						
5						
6						
7						
8						
9						

501075.

Form 40.—GUINNESS'S CASK REGISTER.

Date into Trade. M.	Y.	No. of times sent out.	No. of times Repaired since Feb. 1, '96.	Broken Down. Date	Ref.	Casks Sold. Date.	Ref.	Bought Date.	No.	1 Date Out.	To Whom.	Date In.	2 Date Out.	To Whom.	Date In.	3 Date Out.	To Whom.	Date In.	4 Date Out.	To Whom.	Date In.	5 Date Out.	To Whom.	Date In.	6 Date Out.	To Whom.	Date In.	7 Date Out.	To Whom.	Date In..
M.	92								75	A7	B102	B10	B15	F1	C4	C5	C683	F12	W E	F21	R									
				M.97	21				76																					
M.	92			M.96	10	M.95	3970	H11	77	G17	W3	4 3	H15	B251	S	W E	H13	R	H18	D43	L14	P	L17 Casky Condemned.							
									78																					
									&c.																					
									&c.																					
									99																					

183

N

Form 41.—REGISTER OF JARS, BOTTLES, &c.

Casks																	
½-Gallon Jar																	
1 „ „																	
2 „ „																	
3 „ „																	
4 „ „																	
Bottles, dozen																	
„ ½ „																	
„ ¼ „																	
Casks																	
½-Gallon Jar																	
1 „ „																	
2 „ „																	
3 „ „																	
4 „ „																	
Bottles, dozen																	
„ ½ „																	
„ ¼ „																	
Casks																	
½-Gallon Jar																	
1 „ „																	
2 „ „																	
3 „ „																	
4 „ „																	
Bottles, dozen																	
„ ½ „																	
„ ¼ „																	
Casks																	
½-Gallon Jar																	
1 „ „																	
2 „ „																	
3 „ „ .. .																	
4 „ „																	
Bottles, dozen																	
„ ½ „																	
„ ¼ „																	

Form 42.—HOP BOOK.

Date Received.	Nos. of Pockets.	From whom bought, Description, Price, &c.	Invoice Weight.			Actual Weight.			How Disposed of.	Date Used.	Nos.	Weight when Used.		
1898. Sept. 5.	75	Thirkell	1	2	27	1	3	1	Pale Ale	1898. Sept. 22	75	1	3	1
	77	Brenchley	1	2	23	1	2	25						
	90	Kent	1	3	8	1	3	8	XX	Sept. 29	90	1	3	8
	93	Bramlings, 1898	1	3	16	1	3	19						
	94		1	2	23	1	2	24						
			8	3	13	8	3	21						
		Tare @ 6 lbs.	0	1	2	0	1	2						
			8	2	11	8	2	19						

Form 43.—HOP STOCK BOOK.

STOCK 31st AUGUST, 1898.

Folio of Hop Book.	No. of Pockets.	Name of Hops.	SELLER.	Year.	Price.	Cwt.	Qrs.	lbs.
63	13	Burgundies	Richardson	1895	28/-	36	1	8
18	12	Thirkell	Pike	1897	101/-	19		
23	1	Ongley	Wigans & Cosier	1897	147/-	1	2	4
		&c.	&c.					
		&c.	&c.					
Broken		Thirkell	Richardson	1895	28/-		1	2
		Burgundies	Wigans	1897	108/-		1	23
			Actual Stock, 31st August, 1898			92	3	16
			Used in August, per Brewery Book			55	2	
			Small Sales					11
			Dry Hopping			2		
			C. q. lb.			150	1	27
			Stock, 31st July 111 1 15					
			Received August 39 2 14			151		1
			Deficiency for month				2	2

Form 44.—SPIRIT STOCK BOOK.

Quality and Marks.

Bought from

Date, Terms, and Price.

Where Bonded, and when

Quantity. Quoted Strength.

Rent. Casks.

Excise No.	Cask No.	Bond Gals	Re-dip.	Strength.			Cleared Quantity.	Strength.	When Cleared.	
				O.P.	U.P.					

Form 45.—BARLEY DOCKET.

398

Leicester, 4th May, 1898.

Received from JAMES THOMSON.

Barrels	Stones
17	—

of Barley
@ per Barrel
= £ : :
Less Porterage : :
£ : :

398

Leicester, 4th May, 1898.

Received into the Stores of

THE COUNTY BREWERY COMPANY, Limited.

from Mr. JAMES THOMSON,

17 Barrels — Stones of Barley @

Barrels.	Stones.	Pounds.
17	—	—

per Barrel
= £ : :
Less Porterage .. .. : :
£ : :

HENRY KINAHAN,
Corn Clerk.

Payable at the Cash Office, Thomas Street, Leicester, on any week day between the hours of 11 and 3.

Form 46.– CRANE BOOK.

Where Stored or taken in.	Docket No.	NAME.	Cwt.	Qrs.	Lbs.	Rate.	Cwt.	Qrs.	Lbs.
			Details given in	these	Columns.		Total weight	of each Parcel given in	these Columns.

Form 47.—BARLEY PAYMENTS BOOK.

Date.	Folio.	Name.	Brls.	st.	lbs.	Rate.	£	s.	d.
May 4	398	James Magrath	17	..	..	15/6	13	3	6
„ 6	9	M. M'Gowan	22	8	..	15/-	16	17	6
	400	Do.	95	10	..	15/-	71	14	4
„ 10	1	Jno. Thompson	32	..	..	17/3	27	12	0
„ 12	2	Patrick Neill	343	..	..	15/1	258	13	7
„ 17	3	Hugh Baird & Sons	1,000	..	..	14/7½	733	6	8
„ 21	4	Bernard Reilly	30	7	..	15/6	23	12	5
		Entered in Cash Book 31st May, '98.	1,540	11	..		1,145	0	0
		Average 14/10½ per Barrel for month.							

Form 48.—BARLEY BOOK.

No. of Docket	Date		Name	Brls.	St.	Lbs.	Price	Amount			Date Paid		Amount		

Form 49.—MALTSTERS BOOK.

Barley Received.			Barley Steeped.			Malt to Brewery.		Remarks.
Date.	Quarters.	Quality.	Date.	Quarters.	Quality.	Date.	Quarters.	

Note.—If malt is sold to outsiders an additional column must be provided to record deliveries.

Form 50.—MALT BIN BOOK.

MALT RECEIVED.													
Date	lbs. per Bushel.	1	2	3	4	5	6	&c.	&c.	30	Total.	Date.	Roasted.

MALT USED.															
Date.	Day.	Mark.	Gyle.	1	2	3	4	5	6	&c.	&c.	30	Total.	Date.	Roasted.

Form 51.—INVOICE ANALYSIS or PURCHASE BOOK.

No. of Invoice.	Date.	NAME.	Ledger Folio.	Amount.	BARLEY.		MALT.		HOPS.		SUGAR AND SACCHARINE.		STEAM COAL.		MALTING COAL.		SUNDRIES.	
					Weight.	Amount.	Weight.	Amount.	Weight.	Amount.	Weight.	Amount.	Weight.	Amount.	Weight.	Amount.	Description.	Amount

Form 52.—INVOICE ANALYSIS OR PURCHASE BOOK.

No. of Invoice.	Date.	Name.	Particulars.	Ledger folio	Amount	MALT.		HOPS.		SACCHARINE.		Finings and Sundries.	Stores, Brushes, Cloths, Oil, Grease, &c.	COAL AND COKE.		Horse Food and Stable Expenses.	EXPENSES AND OTHER ACCOUNTS		
						No of Qrs.	Amount.	Weight.	Amount.	Weight.	Amount			Weight.	Amount.		Name of Account	L. fo.	Amount.

Form 53.—AERATED WATER DEPARTMENT.—PURCHASE BOOK.

Date.	No. of Invoice.	Name.	Particulars.	Led. Folio.	Amount.	Essences.	Sugar and Saccharine	Finings and Sundries.	Bottles.	Casks, Labels, Wire and Stoppers.	Horse Keep and Stable Expenses.	Other Accounts.		
												Name of Account.	Led. Folio.	Amount.

Form 54.—CUSTOMERS LEDGER ACCOUNT.

Dr. **HENRY DUNBAR, CLANBRASSIL STREET, DUNDALK.** Cr.

MEMO. { *Terms*—Ordinary Trade—Scorage 6d. per Half-Barrel, if annual trade not less than 100 Barrels.
Furnish—Every Two Months.
Solvency—Good for anything up to £750.

Date.		M.A.	E.I.A.	D.S.	S.S.	T.B.	Cks.	£ s. d.	Date.		Cks.	£ s. d.
1898.	To Amount Forward .						234½	365 5 6	1898.	By Amount Forward ..	211¾	329 11 9
Aug. 26	,, Beer			½	5/2		3	4 9 0	Aug. 31	,, Cks.	18	
,, 31	,, do.				6/2		3	4 4 0	,, 31	,, Ret. Beer	1½	1 4 0
,, 31									,, 31	,, Scorage		11 5 3
										,, Balance	9	31 17 6
							240½	373 18 6			240½	373 18 6
,, 31	Balance						9	31 17 6				

Form 55.—CUSTOMERS LEDGER ACCOUNT.

(HEADINGS AS IN No. 52.)

Dates.		GOODS.	Hhds.	Brls.	½	¼	£	s.	d.	Date.		Cash or Cks.	Hhds.	Brls.	½	¼	£	s.	d.
1898																			
Aug.	31	To 1 xx 5 x			6		4	9	0			By							
	,,	6 x			6		4	4	0										

Form 56.—CUSTOMERS LEDGER ACCOUNT.

			Fo.	H.	B.	H.	Q.	Amount						Fo.	Amount		

Form 57.—FIRST PART.

Agent's Weekly Return

THE COUNTY BREWERY COMPANY, LIMITED.

BRADFORD AGENCY.

Returns for Week ending 31st August, 1898.

CASH ACCOUNT.

Dates Received.	Ledger Folios.	NAMES.	RESIDENCES.	Receipt Book		Discount.			Amount Received			Observations
				No.	Folio	£	s.	d.	£	s.	d.	
Aug. 27		Balance from	last Return						62	7	0	
,,		J. Williams	South Street	15	902				0	3	8	
29		Henry Collins	Albert Square		903	0	0	6	0	13	6	
,,		James M'Can	Townsend Street	17	150	0	12	0	8	4	0	
,,		S. M'Kee	Denebar Street		151	2	19	0	50	9	0	
		&c.	&c.									
		&c.	&c.									
						5	8	0	150	2	8	

Form 57.—SECOND PART.

DELIVERIES FOR WEEK ENDING AUGUST 31st, 1898.

Date	Folio	NAME	RESIDENCE	Dray Book No.	Dray Book Folio	XX H.	XX B.	XX H.B	XX Q.B.	X B.	X B.	X H.B	ALE H.	ALE B.	ALE H.B	E. I. ALE H.	E. I. ALE B.	E. I. ALE H.B	T. BEER H.	T. BEER B.	T. BEER H.B	EMPTIES H.	EMPTIES B.	EMPTIES H.B	EMPTIES Q.B.	Amount. £	s.	d.
		Brought forward								23	6	26						1			7	28	6	29		82	3	0
		Used for Filling up										2												2		1	8	0
	789	P. Henry	Bray Road	138	192							2												2		1	8	0
	314	P. Connolly	Earl Street	138	196					2												1				4	8	0
	202	J. Crawford	Patrick Street	95	152																			5				
	616	Wm. Evans	Market Square		153																			3				
										25	6	30						1			7	29	6	41		89	7	0
	1103	P. Smith	Manningham																					7				
																						29	6	48				
		Deduct	2/2 x used filling									2														1	8	0
										25	6	28						1			7	29	6	48		87	19	0
											57½						½			3½			72½				
											50/-									7/-							

RECAPITULATION.

Week ending August 5th							3¼				118½						1			10			135		121	17	0
" " 12th											112							1		5¼			107		169	5	0
" " 19th											93						1			11½			113½		150	2	0
" " 26th											109½							1		7			126¼		167	11	0
" " 31st											57½							1		3½			73½		87	19	0
							3¼				490½						3½			37½			555¼		696	14	0

Form 57.—THIRD PART.

STORE ACCOUNT FOR WEEK ENDING 31st AUGUST, 1898.

Date.		Folio.	EMPTIES.				XX.				X.			ALE.			E. I. ALE.			T. BEER.		
			H.	B.	H.B.	Q.B.	H.	B.	H.B.	Q B.	H.	B.	H.B.	H.	B.	H.B.	H.	B.	H.B.	H	B.	E.B.
1898																						
Aug. 24	Stock in Store		2	3	18	1		1			21	5	40						4	2	2	10
27	Received from Leicester ..										16		20						2		1	
29	Do. do.											2	5									5
30	A. Murray, Bray Road																					
	Received from Leicester ..										1	2	10						3	1	2	5
	Sent do. do.										16		3									
	P. J. Davis, Patrick Street ..												1									
31	J. Burns, Earl Street												1									
	Empties Received .. .		29	6	41	4																
	Total to be accounted for ..		31	9	59	5		1			54	9	80						9	3	5	20
Aug. 27	Returned to Leicester		3	1	3								6									
,,	Do. do.		3	3	18																	
29	Do. do.		6	2	6																	
30	Sent do.		1		1	4																
,,	Returned do.		10		4) 7)						1											
31	Do. do.		5	2	12								1									
	Total Returns to Brewery ..		28	8	51	4					1		7									
	Sales										25	6	30						1			7
	Stock in Store 31st Aug., 1898.		3	1	8	1		1			28	3	43						8	3	5	13
	Total		31	9	59	5		1			54	9	80						9	3	5	20

Form 58.—AGENT'S MONTHLY RETURN.—(*Continued on next page.*)

THE COUNTY BREWERY COMPANY, LIMITED.

BRADFORD AGENCY.

Returns for Month ending 31st August, 1898.

STORE ACCOUNT.

	EMPTIES.			ALE.			EAST INDIA ALE.			XX STOUT.			X PORTER			TABLE BEER.		
	Hhds.	Bls.	H. Bls.	Hhds.	Bls.	H. Bls.	Hhds.	Bls.	H. Bls.	Hhds.	Bls.	H. Bls.	Hhds.	Bls.	H. Bls.	Hhds.	Bls.	H. Bls.
Stock in store from last month			$17\frac{2}{4}$						4				21	2	35	2	1	5
Received for month to this date, as per weekly returns	249	29	$294\frac{13}{4}$						11	2	1		235	24	$278\frac{1}{4}$	7	9	55
	249	29	$311\frac{15}{4}$						15	2	1		256	26	$313\frac{1}{4}$	9	10	60
Delivered for month to this date, as per weekly returns									7	2			226	23	259	6	5	47
Sales	249	29	$311\frac{15}{4}$						8		1		30	3	$54\frac{1}{4}$	3	5	13
Returns	246	28	$296\frac{14}{4}$										2		$11\frac{1}{4}$			
Stock in store to next month	3	1	$15\frac{1}{4}$						8		1		28	3	43	3	5	13

1st day of September, 1898.

(Signed) JAMES THOMPSON, Agent.

Form 58.—AGENT'S MONTHLY RETURN.—*Concluded.*

CASH ACCOUNT.

	£ s. d.		£ s. d.
By Cash received for month to this date as per weekly returns, viz.:—	920 2 8	To Cash remitted during month to this date, viz.;—	770 0 0
Aug. 5. £180 9 6		Aug. 7. £200 0 0	
,, 12. 210 4 3		,, 14. 200 0 0	
,, 19. 100 5 6		,, 22. 150 0 0	
,, 26. 279 0 9		,, 29. 220 0 0	
,, 31. 150 2 8		£770 0 0	
£920 2 8		Paid for Stamping Receipt Books	2 1 8
		Commission at 10 per cent. on Cash collected	92 0 3
		Carriage on Empties	0 17 6
		Cartage Accounts	15 10 11
		Cash remitted to close for month ending 31st August, 1898	39 12 4
	920 2 8		920 2 8

1st day of September, 1898.

[Signed) JAMES THOMPSON, Agent.

Form 59.—GARLAND'S STOCK BOOK.

KILDERKINS OF XX AT LONDON.

Date.	Received.	Delivered.	Date.	Received.	Delivered.	Date.	Received.	Delivered.	Date.	Received.	Delivered.
Feb. 1898.											
S 3	21										
„	30	25									
4	„	10									
5	20	17									
6	20	15									
7	„	7									
8	20	13									
10	111	87									
S „	24										
„	25	22									
11	„	16									
12	20	19									
13	20	22									
14	„	11									
15	20	17									
17	109	107									
S „	2										
„	40	13									

XX PFKBH &c.

Form 60.—MONTHLY RETURN—*(Continued on next page.)*

THE COUNTY BREWERY COMPANY, LIMITED.

Monthly Return for 189

SALES.

SALES.	Total to last Return		18.....		Last year		Total to date		Last year's total to same date		Increase		Decrease	
	Brls.	Amt.	Brls.	Amt.	Brls.	Amt.	Brls.	Amt.	Brls.	Amt.	Brls.	Amt.	Brls.	Amt.
Beer—														
Free														
Tied														
Managed Houses														
Total ..														
Less Returned Beer														
Net Beer Sales ..														
Barley														
Barm														
Combings (Culms)..														
Grains														
Malt														
Hops..														
Wines														
Spirits														
Mineral Waters ..														

AVERAGE PRICES.

Per Quarter, Ton or Cwt.	To Date	Last year	Increase	Decrease	189	Last year	Increase	Decrease
Barley .. .								
Malt								
Saccharine—(various qualities to be specified)..								
Hops..								
Oats								
Grains								
Steam Coal ..								
Malting Coal ..								

STOCKS.

DRINK. Quality		189	Last year	Increase	Decrease
X	Brls				
XX	,,				
PA	,,				
MA	,,				
TB	,,				
OLD	,,				
Malt	Qrs.				
Saccharine	cwts.				
Hops	,,				

MATERIALS USED.

	To last Return	18	Last Year	Total to date	Last year to same date	Increase	Decrease
Malt							
Patent Malt ..							
Saccharine—(various qualities)							
Hops, Brewing							
Dry Hopping ..							
Coal							

WORKING EXPENSES.

	Total to last Return	18	Last year	Total to Date	Last year total to same date	Increase	Decrease
Discounts							
Wages ..							
Salaries ..							
Sales Expenses							
Freight ..							
Charges ..							
Duty.. .							
Total ..							

CASH STATEMENT.

	189	Last year
Cash in hand		
Bank—		
Current ..		
Deposit ..		
Bills in hand		
Beer Ledger Balances..		

EXTRACT, &c.

	Average to last Return	Average 189	Last year	Average to date	Last year Average to same date
Extract .. .					
Cost per lb. ..					
Malt Mashed ..					
Grains Produced					
Grains, per quarter of Malt					
Price realised per quarter of Malt mashed..					

The foregoing Return has been prepared from the books and other sources, all estimated figures being marked (*), and is declared by us to be correct, to the best of our knowledge and belief.

Signed.....Manager.
.....Chief Clerk.
Date.....

(Concluded on next page).

Form 60.—MONTHLY RETURN—*concluded.*

Monthly Return for *189*

Dr. **BREWING ACCOUNT.** Cr.

	Month ending date	Same month last year	Total to date ..months	Total to date last year
To Malt .....qrs.				
„ Sugar .....cwt.				
„ Hops .....cwt.				
„ Sundry Brewing Materials ..				
„ Duty..				
„ Gross Profit (approximate) ..				

	Month ending date	Same month last year	Total to date ..months	Total to date last year
By Beer Brewed—				
.....Barrels X				
..... do. XX				
..... do. PA				
..... do. MA				
„ Grains				

(Printed on back of first part of Form.)

Form 61.—THE MOORFIELD BREWERY COMPANY, LIMITED.

MONTHLY RETURN.

For.....*189*

Dr.	CASH ACCOUNT.				Cr.			
To Balance in hand					By Sundry Payments.. ..			
,, Cash Receipts—					,, Petty Cash Payments ..			
Beer Ledgers					,, Sundries			
Rent do.					,, Bank Lodgments .. .			
Loan do.								
Sundries					,, Balance in hand .. .			

Dr.	BANKING ACCOUNT.				Cr.			
To Balance					By Sundry Payments—			
,, Lodgments					Brewery Materials : :			
,, Interest					Expenses .. .. : :			
					,, Wages and Salaries ..			
					,, Rents			
					,, Bank Commission			
					,, Sundries—			
					,, Balance			

Production:—							
Barrels	£	:	:				
Grains, &c.		:	:				
Consumption—							
.....quarters Malt	£	:	:				
.....cwt. Sugar		:	:				
.....cwt. Hops		:	-				
Finings, &c.		:	:				
Beer Duty		:	:				
Gross Profits (%)			£				

SALES.

Birmingham, Sales for 189	£	:	:	Total Sales for..... .189..	£	:	:
do. last year ..		:	:	Do. do. ..... last year		:	:
Increase / Decrease } Birmingham	£			Increase / Decrease } for month..	£	:	:
Leicester, Sales for 189	£	:	:	Sales to date.....months.....	£	:	:
do. last year		:	:	Do. corresponding period last year		:	:
Increase / Decrease } Leicester ..	£			Increase / Decrease } to date	£		

	Barrels delivered for month.	Corresponding month last year.		
Birmingham			Total Barrels delivered to date.....months ..	
Leicester ..			Do. corresponding period last year	
Increase / Decrease } for month	:	:	Increase / Decrease } to date..	

Returns for month:—				Total Returns for.....months:—			
Birmingham	£	:	:	Birmingham	£	:	:
Leicester		:	:	Leicester		:	:
Total.....	£	:	:	Total Returns to date ..	£	:	:

Dr. **Form 62.—BEER ACCOUNT.**

1898.		Ale	E. I. Ale	XX St.	X St.	Table Beer	Total in Brls.	£	s.	d.	1898.		Ale	E. I. Ale	XX St.	X St.	Table Beer	Total in Brls.	£	s.	d.
Feb. 28	To Stock .	79	245¾	90½	826¾	104½	1,346½	1,406	3	3	March 31	By Sales as per Beer Sales Book ..	186	230	52½	1,824½	115½	2,408½	3,540	1	0
Aug. 31	,, Brls. Brewed this half-year ..						32,716					(*Intervening Months*)									
	,, Profit and Loss A/c. Sales ..							43,480	8	6											
	,, Do. difference in value of Stocks							121	17	9	Aug. 31	By Deficiency, Waste, &c., including Men's Beer						3,013¾			
												,, Stock	66¾	255	149½	874	110¾	1,456	1,528	1	0
							34,062½	45,008	9	6								34,062½	45,008	9	6
Sept. 1	,, Stock ..	66¾	255	149½	874	110¾	1,456	1,528	1	0											

Form 63.—WAGES ACCOUNT.

Date.		&c.	Brewery.	Cooperage.	Tradesmen.	Draymen and Stables.	Malting.	Folio.	Total.	Date.		Folio.	Amount.

Form 64.—*(Continued on following pages).*

THE COUNTY BREWERY COMPANY, LIMITED.

Accounts for the Year ended 30th September, 1898.

(a) BEER ACCOUNT.

1897.				£	s.	d.	1898.				£	s.	d.
Sept. 30.	To Stock .. .. .. Barrels	2,702	2,297	0	0	Sept. 30.	By Sales .. .. .. Barrels	77,536	143,466	0	0
1898.							,, Yard Tap	370	500	0	0
Sept. 30.	,, Returned Beer	486	900	0	0		,, Stock	3,381	2,874	0	0
	,, Brewed, per Brewing Book	81,599	—	0	0		,, Waste Fermentation, Racking, &c. ..	3,500	—	—	—
	,, Balance	—	143,643	0	0						
		84,787	£146,840	0	0			84,787	£146,840	0	0

(b) BREWING ACCOUNT.

1898.			£	s.	d.	1898.			£	s.	d.
Sept. 30.	To Pale Malt .. .. qrs.	11,199	20,718	0	0	Sept. 30.	By Balance brought down		143,643	0	0
	,, Patent Malt .. .. .. qrs.	71	117	0	0		,, Residuals:—				
	,, Sugar .. .. cwt.	5,160	3,046	0	0		Grains		1,125	0	0
	,, Hops .. .. cwt.	1,103	2,618	0	0		Barm		713	0	0
	,, Finings and Sundry Brewing Materials	—	577	0	0		Hop Pockets		16	0	0
	,, Beer Duty	—	25,287	0	0		Spent Hops		10	0	0
	,, Balance carried to Profit and Loss Account	—	93,151	0	0		Sundries		7	0	0
			£145,514	0	0				£145,514	0	0

Dr. (c) **PROFIT AND LOSS ACCOUNT.** **Cr.**

1898.		£ s. d.	£ s. d.	1898.		£ s. d.
Sept. 30.	To Brewery Wages and Salaries—			Sept. 30.	By Balance from Beer Account	93,151 0 0
	Brewery Men	2,738 6 4			,, Purchased Beer Account—Profit	194 10 6
	Draymen and Extras	730 13 0				
	Brewers' Salaries	800 0 0				
			4,268 19 4			
	,, Yard Tap, and allowances in lieu		670 6 4			
	,, Allowances—					
	Trade Discounts	14,364 0 6				
	Allowances	2,520 0 0				
	Christmas Boxes, &c.	210 0 0				
			17,094 0 0			
	,, Repairs and Renewals—					
	Buildings	235 0 0				
	Plant	446 3 1				
	Tools, &c.	272 10 6				
	Drays, &c.	143 12 8				
			1,097 6 3			
	,, Office Expenses—					
	Salaries	930 0 0				
	Stationery	259 3 6				
	Postages and Telegrams	169 8 4				
	Miscellaneous	126 2 7				
			1,484 14 5			
	,, Pensions		104 0 0			
	,, Cooperage—					
	Materials	335 17 0				
	Wages	420 9 10				
	Renewals	250 0 0				
			1,006 6 10			
	,, Stable Expenses—					
	Wages	104 0 0				
	Forage	664 0 0				
	Shoeing	28 10 6				
	Bedding, &c.	146 8 3				
	Veterinary Charges	63 0 0				
	Harness Repairs and Renewals	97 10 2				
		1,103 8 11				
	Less Manure, &c, sold	33 4 5				
			1,070 4 6			
	,, Travelling and Agency Expenses—					
	Salaries	855 7 8				
	Commission	578 5 10				
	Expenses	124 6 5				
			1,557 19 11			
	Carried forward	£	28,953 17 7		Carried forward	£93,345 10 6

Dr. (c) **PROFIT AND LOSS ACCOUNT**—*concluded.* **Cr.**

1898.		£ s. d.	£ s. d.	1898.		£ s. d.
Sept. 30.	Brought forward		28,353 17 7	Sept. 20.	Brought forward..	93,345 10 6
	To Canteen Commission and other expenses..		329 4 7			
	,, Coal		923 6 5			
	,, Water		388 12 0			
	,, Gas		348 5 6			
	,, Rent, Rates, &c., of Brewery—					
	Rents	59 10 6				
	Rates	374 3 8				
	Property Tax	60 10 6				
	Insurance	75 0 0				
			569 4 8			
	,, Rents, Rates, &c., of Houses—					
	Rents	239 7 6				
	Rates	843 4 5				
	Property Tax	156 2 10				
	Insurance	228 0 0				
			1,466 14 9			
	,, Repairs and Renewals of Houses—					
	Buildings	778 4 10				
	Furniture and Fittings	329 8 7				
	Utensils and Loose Effects	62 8 3				
			1,170 1 8			
	,, Advertising and Show Cards..		95 10 3			
	,, Trade Subscriptions		52 10 0			
	,, Carriage		1,760 3 9			
	,, Bank Commission and Charges		134 0 0			
	,, Legal Expenses		302 3 4			
	,, Auditors' Fee		105 0 0			
	,, Miscellaneous Expenses..		96 8 2			
	,, Bad Debts		286 10 0			
	,, Depreciations—					
	Leasehold Premises	1,250 0 0	36,381 12 8			
	Plant, Machinery, &c.	553 5 6				
	Furniture and Fittings of Houses	726 18 10				
	Casks	428 3 7				
	Horses, Harness, &c.	338 10 0				
	Office Furniture	27 15 0				
			3,324 12 11			
			39,706 5 7			
	,, Net Profit to General Profit and Loss Account		53,639 4 11			
		£	93,345 10 6			£93,345 10 6

Dr. (d) **BARLEY ACCOUNT, SEASON, 1897-8.** **Cr.**

	Qrs.	Price. £ s. d.	£ s. d.		Qrs.	£ s. d.	£ s. d.
				Screenings—			
				Sales	258	1 0 0	258 0 0
Barley bought	24,750	1 9 5·22	36,425 8 11	Brewery	251	1 0 0	251 0 0
					509		509 0 0
				Malting Account, Balance Barley Steeped	24,241	1 9 7·46	35,916 8 11
			£36,425 8 11		24,750		£36,425 8 11

(e) MALTING ACCOUNT, SEASON 1897, 1898.

	Quarters.	Price on out-turn of 24,621. £ s. d.	£ s. d.
Barley Account for Barley Steeped	24,241	1 9 7·46	35,916 8 11
MANUFACTURING CHARGES.			
Wages		0 1 6·06	1,850 3 6
Salaries, Maltster and Corn Clerks		4·06	415 3 6
Coal, 700 tons		7 72	728 3 6
Slippers, Shovels and other Requisites		·04	36 8 0
Repairs, including £51, one-fourth of cost of new Kiln ..		2·10	215 6 0
Miscellaneous Expenses, Telegrams, Postages, Office Charges, &c.		1·04	102 5 6
Rent		9·76	1,000 0 0
Rates, Taxes and Insurance		3 26	333 6 4
		0 3 10·04	
		On Sales 11,432.	
DELIVERY CHARGES.			
Sacks, and Freight thereon		1·32	62 8 6
Freight on Malt sold		10·92	615 10 0
Cartage		5·32	254 10 0
		17·56	
			41,529 13 9
Balance, Profit to General Profit and Loss Account.. ..			5,818 17 7
			£47,348 11 4

	Quarters.	Price per Quarter. £ s. d.	£ s. d.
MALT—			
Sales	13,422	1 18 10	26,243 1 4
Brewery	11,199	1 17 0	20,718 0 0
	24,621		
Barley steeped	24 241		
Increase	380		
		T. C. Q.	
Combings		110 3 0	355 0 0
Sundries			32 10 0
			£47,348 11 4

(f) GENERAL PROFIT AND LOSS ACCOUNT.

1897.		£	s.	d.	1897.		£	s.	d.
Oct. 17	To Reserve Fund, Transfer	5,000	0	0	Sept. 30	By Balance	26,685	7	2
	„ Final Dividends to 30th September, 1897:—								
	Less Income Tax on £300,000 Cumulative Preference Shares at 5½ per cent. per annum .. £7,975 0 0								
	£300,000 Ordinary Shares at 8 per cent. per annum £11,600 0 0								
		19,575	0	0					
	„ Balance carried down	2,110	7	2					
		£26,685	7	2			£26,685	7	2

1898.		£	s.	d.	1897.		£	s.	d.
Sept. 30	To Managing Directors' Salaries	2,000	0	0	Oct. 17	By Balance brought down	2,110	7	2
	„ Directors' Fees	750	0	0					
	„ Fee to Trustees for Debenture Stock Holders .	315	0	0	1898.				
	„ Income Tax to 5th April 1898	2,117	0	0	Sept. 30	„ Profit on Brewing Account	53,689	4	11
	„ One Year's Interest on £400,000 4 per cent. First Mortgage Debenture Stock, less Income Tax	15,466	13	4		„ Profit on Malting Account	5,818	17	7
						„ Rents from Tied Houses and Cottage Property ..	9,504	15	10
	„ Interim Dividend for the half-year to 31st March, 1898, *Less* Income Tax on:—					„ Interest on Loans	145	0	0
	£300,000 Cumulative Preference Shares at 5½ per cent. per annum £7,975 0 0					„ Interest on Investments	791	3	9
	£300,000 Ordinary Shares at 8 per cent. per annum .. £11,600 0 0					„ Transfer Fees	115	10	0
		19,575	0	0					
	„ Balance	31,901	5	11					
		£72,124	19	3			£72,124	19	3

(g) BALANCE SHEET, 30th SEPTEMBER, 1898.

CAPITAL AND LIABILITIES.	£	s.	d.	£	s.	d.
CAPITAL—						
60,000 five-and-a-half per cent. Cumulative Preference Shares of £5 each, fully-paid up	300,000	0	0			
60,000 Ordinary Shares of £5 each, fully-paid up	300,000	0	0			
				600,000	0	0
DEBENTURE STOCK—						
400,000 four per cent. First Mortgage Debenture Stock				400,000	0	0
LIABILITIES—						
Sundry Creditors on Open Accounts, Excise Duty, Rent, &c., accrued to 30th September, 1898	8,611	11	4			
Half-year's interest on Debenture Stock to 30th September, 1898 ..	7,733	6	8			
Interest and Dividends outstanding ..	320	19	3			
				16 665	17	3
RESERVE FUND				15,000	0	0
PROFIT AND LOSS ACCOUNT—						
Balance at 30th September, 1897 ..	2,110	7	2			
Net Profit for Year	70,014	12	1			
	72,124	19	3			
Less Interest on Debenture Stock to 30th September, 1898, Interim Dividends on Preference and Ordinary Shares, Expenses of Management and Directors, Income Tax, &c.	40,223	13	4			
				31,901	5	11
Carried forward				£1,063,567	3	2

ASSETS.	£	s.	d.	£	s.	d.
Freehold Brewery and Malting Premises, Plant, Machinery, Freehold and Leasehold Houses, Fixtures and Fittings of Houses, Goodwill, &c., as per prospectus..	962,000	0	0			
Additions to Premises, Plant and new Houses bought to 30th September, 1897	6,300	0	0			
Do. for year to 30th September, 1898	2,500	0	0			
	970,800	0	0			
Less Depreciation on Leasehold Houses, Plant, &c., debited to Profit and Loss Accounts	7,491	13	1			
				963,308	6	11
Casks and Cooperage Materials	5,749	1	8			
Horses, Drays, Harness, &c.	2,925	2	7			
				8,674	4	3
Loans to Customers..	3,000	0	0			
Investments, at Cost	22,356	4	8			
				25,356	4	8
SUNDRY DEBTORS—						
Beer Ledgers	17,461	5	10			
Miscellaneous	515	9	10			
Bills Receivable on Hand .. .. (Bills Receivable under Discount, *Nil.*)	1,246	17	11			
	19,223	13	7			
Less, Reserve for Bad and Doubtful Debts, and Provision for Discount ..	2,158	15	4			
				17,064	18	3
Carried forward				£1,014,403	14	1

(g) BALANCE SHEET, 30th SEPTEMBER, 1898.—*Concluded.*

CAPITAL AND LIABILITIES.	£	s.	d	ASSETS.	£	s.	d.	£	s.	d.
Brought forward	1,063,567	3	2	Brought forward				1,014,403	14	1
				Rents accrued due	736	0	0			
				Insurance, &c., paid in advance	253	10	0			
				Interest and Dividends accrued due ..	267	15	2			
								1,257	5	2
				STOCK IN TRADE—						
				Drink, Hops, Sugar, &c., and Stocks in Managed Houses	12,686	17	5			
				Miscellaneous Stocks—Coal, Forage, Corks, Shives, &c.	2,158	15	5			
								14,845	12	10
				CASH IN BANK AND IN HAND—						
				Capital and Counties Bank:—						
				Debenture Interest Account.. ..	7,733	6	8			
				Deposit Account	23,000	0	0			
				Current Account	2,187	19	9			
				In Hand	139	4	8			
								33,060	11	1
	£1,063,567	3	2					£1,063,567	3	2

Form 65.—(*Continued on next page.*)

ACCOUNTS FOR THE YEAR ENDED 30th SEPTEMBER, 1898.

(*a*) BEER PRODUCTION ACCOUNT.

Dr.									Cr.					
1898.			£	s.	d.	£	s.	d.	1898.		Barrels.	£	s.	d.
Sept. 30	To Materials Used:—								Sept. 30	By Beer Brewed as per Brewing Book Transferred at Cost to Beer Stock Account	81,983	52,843	0	0
	Pale Malt .. .	11,199 qrs.	20,718	0	0					*Less* Returns Mixed	384	480	0	0
	Patent Malt	71 qrs.	117	0	0						81,599	52,363	0	0
	Sugar	5,160 cwt.	3,046	0	0									
	Hops	1,103 cwt.	2,618	0	0									
	Finings and Sundry Brewing Materials..		577	0	0									
						27,076	0	0						
	„ Duty					25,287	0	0						
						£52,363	0	0				£52,363	0	0

(*b*) BEER STOCK ACCOUNT.

Dr.						Cr.					
1897.		Barrels.	£	s.	d.	1898.		Barrels.	£	s.	d.
Sept. 30	To Stock..	2,702	2,297	0	0	Sept. 30	By Cost of Beer Sold as per Day Book	77,536	52,266	0	0
1898.							„ Yard Tap	370			
Sept. 30	„ Beer Brewed during year	81,599	52,363	0	0		„ Stock..	3,381	2,874	0	0
	„ Returned Beer used, Estimated Cost	384	480	0	0		„ Deficiency	3,398			
		84,685	£55,140	0	0			84,685	£55,140	0	0

Form 65.—ACCOUNTS FOR THE YEAR ENDED 30th SEPTEMBER, 1898.—(*Concluded.*)

(*c*) RETURNED BEER STOCK ACCOUNT.

Dr.		Barrels.	£	s.	d.			Barrels.	£	s.	d.	Cr.
1897. Sept. 30	To Stock..	100	125	0	0	1898. Sept. 30	By Quantity Mixed with New Brews, at Cost ..	384	480	0	0	
1898. Sept. 30	,, Returns as per Day Book and Allowances for Leakages	486	900	0	0		,, Quantity Lost, Leakages and Allowances, at Cost	102	125	0	0	
							,, Stock, at Cost	100	125	0	0	
							,, Loss of Profit on Returns		295	0	0	
			£1,025	0	0				£1,025	0	0	

(*d*) TRADING ACCOUNT.

Dr.		£	s.	d.	£	s.	d.			£	s.	d.	£	s.	d.	Cr.
1898. Sept. 30	To Cost of 77,906 Barrels Sold				52,266	0	0	1898. Sept. 30	By Sales—Tied	110,324	0	0				
	,, Returns not used, Leakages and Allowances, at Cost	125	0	0					Free	30,828	0	0				
									Private	2,314	0	0				
	,, Loss of Profit on 486 Barrels, Returns for the Year	295	0	0									143,466	0	0	
					420	0	0		,, Sales of Residuals Grains	1,125	0	0				
	,, Gross Profit carried down				93,151	0	0		Barm	713	0	0				
									Hop Pockets ..	16	0	0				
									Spent Hops ..	10	0	0				
									Sundries	7	0	0				
													1,871	0	0	
									,, Yard Tap				500	0	0	
					£145,837	0	0						£145,837	0	0	

Form 66.—MANAGED HOUSE.

Statement of Business done at ..... *Vaults for Week ending* 189

Date.	Cash taken to 12 noon.	Cash taken to 6 p.m.	Cash taken to 11 p.m.	Total of Day's Takings.	Disbursements.	Amount.
Monday ..						
Tuesday ..						
Wednesday						
Thursday.						
Friday .						
Saturday .						
Sunday ..						
	— — —	— — —	— — —	— — —		— — —
	£				Balance	
					£	

..... *Manager.*

Form 67.—MANAGED HOUSE.—WEEKLY STATEMENT.

Statement of Business done at ..... *Vaults for Week ending* 189

Date.	Cash taken to 12 p.m.	Cash taken to 6 p.m.	Cash taken to 11 p.m.	Total of Day's Takings.	CASH PAYMENTS.	Amount.
Monday ..					GOODS FOR SALE—	
Tuesday ..					Tobacco £ : : Minerals £ : : Stout, &c. £ : :	
Wednesday					TRADE EXPENSES—	
Thursday..					Piano £ : : Coal £	
Friday ..					SUNDRIES—	
Saturday ..						
Sunday ..						
Special Receipts ..						
					Net Wages £ Servants	
					Money Spent .. .	
					Cash to Inspector ..	
		Total Receipts £			Total Receipts £	

Having read the rules at the beginning of the Takings Book, and agreed thereto, I declare this to be a true and correct Statement of the Business done under my charge.

..... *Manager.*

N.B.—This sheet must be made up and the Cash Balance handed to the Inspector. The sheet together with all Invoices, Bills and Receipts pinned on must be given to him at the same time.

IMPORTANT.—The columns at the back of the sheet must be carefully filled up each day.

Managers summoned for breach of the Licensing Laws will not receive pecuniary or other assistance from the Company.

Form 67—*concluded.*—WEEKLY STATEMENT.

GOODS RECEIVED AND NOT PAID FOR.

Quantities, Qualities and Amounts must be correctly copied from Invoices on to this side of the Sheet at the close of each day, ready for the Stocktaker's inspection whenever he calls.

Beer	Wines and Spirits	Cigars	Minerals	Given away out of Stock
		Bottled Ale and Stout	Sundries—Coal, &c.	Returns

N.B.—1.—Managers are strictly forbidden to pledge the credit of the firm.
2.—Unless specially authorised in writing, all goods not direct from the Company must be paid for on delivery.
3.—For Minerals, Bottled Goods, Stout and Coal, Managers must deal only with Firms authorised by the Company.

Form 68.—HOTEL UNDER MANAGEMENT.

WEEKLY STATEMENT.

Return for Week Ending ..... *189* .

Date.	Apartments.	Board.	Billiards.	Bar.	Bar.	Rest'rant	Yard, Stabling, Stock Rooms, &c.	Total.

£

PURCHASES—Bottled Ale and Stout .. ..
Mineral Waters .. ..
Tobacco .. ..

BOARD A/CS.—Meat .. ..
Poultry and Game .. ..
Fish .. ..
Vegetables .. ..
Bread .. ..
Groceries .. ..
Milk .. ..

TRADE EXPENSES—Coal .. ..
Laundry .. ..
Sundries .. ..

SERVANTS' WAGES .. ..

MANAGER'S SALARY .. ..

Total Expenses .. ..

Cash Banked .. ..

£

I hereby declare this a true statement.

(Signed)

Form 69.—MANAGED HOUSES.

CASH RECEIPTS AND PAYMENTS BOOK.

Name of House	Total Drawings						Payments out of Drawings												Ledger Folio
	Weeks ending					Total for Month	January 3		January 10		January 17		January 24		January 31		Total for Month		
	Jan. 3	Jan. 10	Jan. 17	Jan. 24	Jan. 31		Purchases	Expenses	Purchases	Expenses	Purchases	Expenses	Purchases	Expenses	Purchases	Expenses	Purchases	Expenses	
"Crown & Thistle"																			
"Malt Shovel" ..																			
"Rising Sun" ..																			
&c., &c.																			

Form 70.—STOCK SHEET.

VALUE OF STOCK HOUSE DATE

Article.	Gallons. Particulars.	Total	Price	Value.	Article.	Bottles. Particulars.	Total	Price	Value.	Tobacco, Cigars and Sundries.	Particulars.	Total	Price	Value.
Irish Whiskey 6d.					Ports—					Cigars 1d.				
" " 7d.					No. 1 2/6					" 2d.				
" " 8d.					" 2 3/-					" 3d.				
Scotch Whiskey 6d.					" 3 3/3					" 4d.				
" " 7d.					" 4 3/6					" 6d.				
" " 8d.					Sherries—					Cigarettes				
Rum .. .. 6d.					No. 1 2/6					Fins 1d.				
" .. .. 7d.					" 2 3/-					Tobaccos				
" .. .. 8d.					" 3 3/3					"				
Gin .. .. 5d.					" 4 3/6					Bass S				
" .. .. 6d.					Champagnes					" L				
" .. .. 7d.					S 4/6					Guinness S				
Brandy .. 6d.					L 8/-					" L				
" .. 9d.					S 5/6									
" .. 1/-					L 10/6					Cider				
					Clarets—					Minerals				
Ports .. .. 5d.					S 1/3					Stone Beer				
" .. .. 6d.					L 2/6					Quinine				
" .. .. 8d.					S 1/9									
					L 3/-									
Sherries .. 5d.					S 2/-									
" .. 8d.					L 3/6									
Aniseed .. 5d.														
Peppermint . 5d.														
Orange Bitters 5d.														
Lime Juice .. 5d.														
Cherry Brandy														
Ginger Brandy														
Ginger Wine														
		£					£					£		

Beer. Mark.	Gallons.	Total	Price	Value.
TA				
TB				
VOB				
MA				
X				
XX				
XXX				
XXXX				
OA				
PA				
IPA				
P				
S				
			£	

SUMMARY.

Beer			
Discount			
Tobacco and Sundries .			
Spirits & Wines in Bottle			
Discount .. .			
Wines & Spirits .. .			
Discount			
Cash in Hand			
Credit			£

Dr. **Form 71.—MANAGED HOUSE—LEDGER ACCOUNT.** **Cr.**

Date.	Particulars.	Ref. Folio.	Expenses.	Sundry Purchases.	Wines, Spirits, and Waters.	Beer.	Total Debits.	Date.		Ref. Folio.	Cash Drawings.

Form 72.—MANAGED HOUSE—QUARTERLY AND YEARLY STATEMENT.

TRADE ACCOUNT.

Dr.	..... To ..... Days.	.. .. To ..... Days.	..... To ..... Days.	..... To ..... Days.	Total.	Cr.	..... To ..... Days.	..... To ..... Days.	..... To ..... Days.	..... To ..... Days.	Total.
To Stock at Commencement ..						By Gross Takings					
„ Cash in Hand						„ Cash in Hand					
„ Book Debts						„ Stock at end of Term					
„ Ale Supplied						„ Book Debts					
„ Wines, Spirits and Cigars, &c.						„ Discount					
„ Bottled Goods											
„ Mineral Waters											
„ Sundries											
„ Gross Profit											
Gross Percentage						Average Weekly Takings					

PROFIT AND LOSS FOR THE ABOVE-NAMED PERIODS.

Dr.						Cr.					
To Proportion of Rent, Rates, Taxes, Licences, Gas, &c. .						By Gross Profit					
„ Trade Expenses						„ Loss					
„ Wages											
„ Coal											
„ Reserve for Current Expenses											
„ Profit											
Average Weekly Profit						Average Weekly Loss					

Form 73.—MANAGED HOUSE ACCOUNT.—Retail System.

150, KING STREET.

1898.		£	s.	d.	£	s.	d.	1898.		£	s.	d.	£	s.	d.
April 1.	Cash on Hand	27	3	9				June 30.	Expenses				43	5	11
	Debts	219	10	0											
	Stock	312	5	5					Cash to Mr. Jones				569	0	9
					558	19	2		Cost of Cash Purchases						
	Purchase per Invoices	299	10	0					Cash on Hand	5	12	6			
	Cash do. do. do.								Debts	211	3	10			
	Supplies from Deposit	259	1	6					Stock	258	15	5			
					558	11	6						475	11	9
									Balance				29	12	3
				£	1,117	10	8					£	1,117	10	8

Form 74.—MANAGED HOUSE ACCOUNT.—RETAIL SYSTEM.

75, VICTORIA STREET.

1898.		£	s.	d.	£	s.	d.	1898.		£	s.	d.	£	s.	d.
April 1	Cash on Hand	32	10	8				June 30	Expenses				49	12	3
	Debts	495	3	7											
	Stock	653	17	5											
					1,181	11	8		Cash to Mr. Jones				680	4	11
									Cost of Cash Purchases				29	6	1
	Purchases per Invoices	195	19	3											
	Cash do. do. do.	29	6	1											
	Supplies from Depot	530	2	3											
					755	7	7		Cash on Hand	28	17	6			
									Debts	508	18	11			
									Stock	643	15	7			
	Balance				3	16	0						1,181	12	0
					£1,940	15	3						£1,940	15	3

TABLE OF EXCISE DUTIES AND LICENSES.

	£	s.	d.
Beer of specific gravity of 1,055 per barrel of 36 galls.	0	6	9
Brewer's License, brewing beer for sale, per annum	1	0	0
NOT BREWING BEER FOR SALE.			
Annual value of house not exceeding £8	Free.		
Annual value of house over £8 and under £10 per annum	0	4	0
Annual value of house over £10 and not exceeding £15	0	9	0
In any other case together with, and in addition to "duty on beer" made per annum	0	4	0
Beer-Dealer's License, wholesale, not brewer, per annum ..	3	6	1
Beer-Dealer's License, to sell in any quantity, additional not to be consumed on the premises (England, Wales and Ireland only), per annum	1	5	0
Retailer's License, for table beer	0	5	0
Retailer's License for beer (Scotland only) rated under £10 ..	2	10	0
Rated at £10 or over	4	4	0
PUBLICAN'S LICENSE, for Spirits, Beer and Wine to be consumed on the Premises, annual to October 10th, United Kingdom :—			
If annual value is under £10	4	10	0
Do. £10 and under £15	6	0	0
Do. £15 ,, £20	8	0	0
Do. £20 ,, £25	11	0	0
Do. £25 ,, £30	14	0	0
Do. £30 ,, £40	17	0	0
Do. £40 ,, £50	20	0	0
Do. £50 ,, £100	25	0	0
Do. £100 ,, £200	30	0	0
Do. £200 ,, £300	35	0	0
Do. £300 ,, £400	40	0	0
Do. £400 ,, £500	45	0	0
Do. £500 ,, £600	50	0	0
Do. £600 ,, £700	55	0	0
Do. £700 or above	60	0	0

NOTE.—Publicans keeping their premises closed the whole of Sunday, or closing one hour sooner than required on week days, pay only six-sevenths of the above amounts. Publicans doing both the before mentioned, pay only five-sevenths. All retailers of liquors for consumption on the premises are similarly entitled.

Retailer's License for Beer and Wine to be consumed on the premises	4	0	0
Not to be consumed on the premises	3	0	0
Retailer's License for Beer, Cider and Perry, to be consumed on the premises	3	10	0
Not to be consumed on the premises (England and Wales only)	1	5	0
Occasional Licenses, per diem—			
Publican's	0	2	6
Beer Retailer's	0	1	0
Wine Retailer's	0	1	0

TABLE OF DRY OR CORN MEASURES.

Quart	=	2 Pints.
Pottle	=	2 Quarts.
Gallon	=	4 ,,
Peck	=	2 Gallons.
Bushel	=	4 Pecks.
Strike	=	2 Bushels.
Coomb	=	4 ,,
Quarter	=	8 ,,
Load	=	5 Quarters.
Last	=	10 ,,
1 Gall	=	4·543 litres (metric).

Wheat and other cereals are commonly sold by weight, the bushel being thus reckoned :—

Wheat—English, 63 lbs. Foreign, 62 lbs.

Barley—English, 52 and 56 lbs. French, 52½ lbs. Mediterranean, 50 lbs.

Oats—English, 40 and 42 lbs. Foreign, 38 and 40 lbs.

Rye and Maize—60 lbs.

Buckwheat—52 lbs. to the bushel.

Grain of all kinds is frequently sold by the stone of 14 lbs.

In Ireland Barley is sold by the barrel, weighing 224 lbs. and containing 4 bushels.

TABLE OF LIQUID MEASURE.

The Gill contains 8·665 cubic inches.

The Pint contains 4 gills or 34·660 cubic inches.

Quart = 2 pints = 8 gills.

Gallon = 4 quarts = 32 gills.

	Gals.	Qts.	Pts.
Firkin or Quarter Barrel	9	36	72
Anker (10 gallons)	10	40	80
Kilderkin, Rundlet or ½-Barrel	18	72	144
Barrel	36	144	288
Tierce (42 gallons)	42	168	336
Hogshead of Ale (1½ barrels)	54	216	432
Puncheon	72	288	576
Butt of Ale (3 barrels)	108	432	864

1 Gall = 4·543 litres (metric)

TABLE SHEWING EQUIVALENTS IN SPECIFIC GRAVITY OF POUNDS PER BARREL.

Lbs. per brl.	Sp. Gr. Water =1000.	Lbs. per brl.	Sp. Gr. Water =1000.
1	1002·77	24	1066·66
2	1005·55	25	1069·44
3	1008·33	26	1072·22
4	1011·11	27	1075·00
5	1013·88	28	1077·77
6	1016·66	29	1080·55
7	1019·44	30	1083·33
8	1022·22	31	1086·11
9	1025·00	32	1088·88
10	1027·77	33	1091·66
11	1030·55	34	1094·44
12	1033·33	35	1097·22
13	1036·11	36	1100·00
14	1038 88	37	1102·77
15	1041·66	38	1105·55
16	1044·44	39	1108·33
17	1047·22	40	1111·11
18	1050·00	41	1113·88
19	1062 77	42	1116·66
20	1055·55	43	1119·44
21	1058·33	44	1122·22
22	1061·11	45	1125·00
23	1063·88		

TABLE shewing for each of the fourteen years, 1885—1898 inclusive, the acreage in the United Kingdom under Barley, the estimated total produce, the calculated yield per acre, and the average price per quarter.

1885	2,436,823	85,721,632	35·18	30	1
1886	2,423,060	78,309,607	32·32	26	7
1887	2,247,583	69,948,266	31·12	25	4
1888	2,256,870	74,545,549	33·03	27	10
1889	2,307,784	74,703,755	32·37	25	10
1890	2,293,615	80,793,525	35·23	28	8
1891	2,291,117	79,555,089	34·72	28	2
1892	2,212,396	76,939,135	34·78	26	2
1893	2,244,068	65,745,992	29·30	25	7
1894	2,260,542	78,600,635	34·77	24	6
1895	2,338,067	75,028,474	32·09	21	11
1896	2,278,179	77,824,701	34·16	22	11
1897	2,206,442	72,613,455	32·91	23	6
1898	2,061,827	74,780,785	36·24	27	2
Average, 14 years	2,275,598	76,075,757	33·43	26	0

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account in ledger, particulars which should be shown therein 95
pressed 124
produced during fermentation 13
sales of, in liquid form 14
waste in brewing greater where not used 124

PEAT, MARWICK, MITCHELL & CO.

RETURN TO ➡ **CIRCULATION DEPARTMENT**
202 Main Library

LOAN PERIOD 1 **HOME USE**	2	3
4	5	6

ALL BOOKS MAY BE RECALLED AFTER 7 DAYS
1-month loans may be renewed by calling 642-3405
6-month loans may be recharged by bringing books to Circulation Desk
Renewals and recharges may be made 4 days prior to due date

DUE AS STAMPED BELOW

INTERLIBRARY LOAN
JUL 6 1979
UNIV. OF CALIF., BERK.
REC. CIR. AUG 7 1979

UNIVERSITY OF CALIFORNIA, BERKELEY
FORM NO. DD6, 60m, 11/78 BERKELEY, CA 94720

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